1938.

QUEENSLAND.

15 MAY 1939

ANNUAL REPORT

OF THE

DEPARTMENT OF AGRICULTURE AND STOCK

FOR

THE YEAR 1937-1938.

PRESENTED TO PARLIAMENT BY COMMAND.

BRISBANE:
BY AUTHORITY: DAVID WHYTE, GOVERNMENT PRINTER.

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REPORT OF THE DEPARTMENT OF AGRICULTURE AND STOCK FOR THE YEAR 1937-38.

TO THE HONOURABLE THE SECRETARY FOR AGRICULTURE AND STOCK.

SIR,—I have the honour to present herewith my report for the year ended 30th June, 1938.

SEASONAL CONDITIONS.

Throughout the agricultural and dairying districts seasonal conditions were a marked improvement on the weather experiences of the previous year. Although the incidence of the rainfall did not favour heavy grain yields, generous summer rains assured vigorous growth of all fodder and grazing crops, of which it was possible to conserve a considerable proportion.

The dry conditions of the autumn of 1937 continued until midwinter, although the rainfall then was generally under the average for that time of the year. On the Darling Downs, however, falls were sufficient for the completion of wheat plantings. A comparatively dry July was followed by a wet August and crops already established made rapid growth, especially on the South Coast and the Downs. September rains were scanty. In the late spring and early summer, storm rains brought relief to the farming and dairy lands from the southern border to as far northwards as Mackay. The widely spread falls —the heaviest recorded since the previous March—made early sowings of summer crops possible. By the end of November, the favourable seasonal conditions had extended to the agricultural districts in the Far North. Stormy weather continued throughout December and January, and benefited greatly both pastures and crops. Meanwhile, because of delayed summer rains, an anxious position was developing in the Maranoa. Heavy falls in January changed the whole outlook over most of the Southern Division of the State. In the Central Division, unfortunately, droughty conditions continued, especially in the western pastoral districts. February was a very wet month in the North, but elsewhere hot dry weather caused the wilting of pastures and growing crops. Light rains and scattered storms were the weather experiences during March and April. Very heavy general rains in May ensured an abundance of winter feed for stock and excellent prospects for the wheatgrower. Mild conditions and frequent showers have since maintained pastures and steady development of sown crops.

The pastoral districts of the State had a fairly good year. In parts of the Central West, however, conditions of extreme dryness continue to cause anxiety. Summer rains were fairly widely distributed, but their beneficial effect was offset in some parts of the State by a prolonged hot dry spell which came later. While rain was rarely general and its volume variable over the far inland grazing regions, there has been enough to quicken growth in grass and herbage. On large areas of Mitchell and Flinders grass country, which for years previously had been over-run with roley-poley, natural pastures have become re-established. Most of the pastoral lands are well grassed for this time of the year, and the favoured areas are situated more or less conveniently for those graziers who, unfortunately, have been forced to look for relief country. Except in the districts where seasonal conditions have been subnormal, stock are wintering well; while recent beneficial rains have ensured a sufficiency of spring pasturage.

Throughout the fruitgrowing districts weather conditions were variable. Beneficial spring rains were recorded on the coastal country northwards to Rockhampton. A dry spring and summer was the experience in other parts of the Central Division, while the far northern areas had a good season generally. Up to January conditions were excellent in the Stanthorpe district; afterwards the rainfall was insufficient for late crops.

All the dairying districts report a good average year, and in some of them, where production usually begins to decline at the close of autumn, butter factories are still working to full capacity.

A good winter is now being experienced, crop forecasts are favourable, and a prosperous agricultural year is in prospect.

THE PASTORAL INDUSTRY.

The statistical position of the pastoral industry as at 1st January, 1938, is shown by the following preliminary figures compiled by the Government Statistician from stock returns:—

Horses.—The 1938 total was 441,000, as compared with 441,536 in the previous year.

Cattle.—A slight increase in the number of cattle is reported, the total being 6,000,000. The previous year's total was 5,950,000.

Sheep.—The number of sheep in the State shows a substantial increase of over 2,000,000 compared with the total a year earlier. The figure for the current year is the highest recorded since 1932, when the total was 22,324,278. The 1938 total was 22,200,000, as compared with the 1937 total of 20,011,749.

Pigs.—The numbers show very little change, the total—290,000—being slightly below that recorded—290,855—for the previous year.

Improvement in the breeding of stock is receiving considerable attention from many stockowners who have introduced new blood from overseas and the Southern States.

The frozen beef export trade remains about the same as in previous years, representing 66 per cent. of the Australian total. Chilled beef exports continue to increase steadily. Statistics issued by the Australian Meat Board show that for the last two years the percentage of chilled beef exported from this State as compared with the total export from the Commonwealth is over

90 per cent. The Department has continued to assist in every way possible in the expansion of this promising development in the meat export trade. In fact, this development has definitely improved the prospects of the grazing industry. Not only have beef shipments increased substantially, but higher returns have been received by producers from both home and export markets. It is obvious that a further expansion of the export trade will have a marked beneficial influence on the general conditions of the industry in this State.

As a result of the increase in exports and higher chilled beef values, the total return to producers for the statistical year is greatly in advance of the total for 1936-37.

There is every indication of a good year for fatteners.

Large numbers of fat bullocks continue to be turned off coastal pastures. Up to £6 5s. has been paid for bullocks of fattening age, and exporters are paying good prices for "chillers."

The following comparison of "chiller" prices show an average advance of about 3s. 6d. a 100 lb. dressed weight:—

	1937.		1938.	
	s.	*d.*	*s.*	*d.*
January	33	0	31	6
February	29	8	33	3
March	28	7	32	7
April	29	3	32	4
May	26	5	30	8

For the first half of 1937, approximately 75 per cent. of the exports were frozen and 25 per cent. chilled beef. For the first half of 1938, the export returns showed 69 per cent. frozen and 31 per cent. chilled. The volume of exports of beef from Queensland has increased by about 25 per cent. over that of the previous year.

The measure of success which has so far attended the scheme for fattening cattle on coastal country in the Far North suggests a big future for this and similar projects. The scheme is the first under which grass feeding experiments have been conducted on coastal areas with beef cattle on such a scale as to make reasonable economic deductions possible. Bullocks from the experimental pastures when slaughtered exceeded anticipations from a butcher's point of view, and in an early shipment of chilled beef the Tully product topped the market. This initial success has stimulated further experiments and investigations.

Diatetic and Biochemical Work.—An account of diatetic and biochemical work is given by the Animal Nutrition Research Officer, Dr. M. White, in his report. It is a fortunate circumstance that Queensland produces a large variety of concentrated stock foods; there remains, however, the need for more extensive investigations into the feeding value of pastures and edible shrubs.

A series of trials to determine the digestibility of some stock foods will form the subject of later work.

Sheep and Wool.—From an Australian point of view, the 1937-38 wool season was disappointing. Although the volume of production has been maintained, the bulk of the clip was sold at prices ranging from 30 to 35 per cent. below the preceding season's level. The total wool cheque for the Commonwealth is estimated at about £47,000,000 (of which £43,515,000 was realised from sales within Australia), compared with approximately £66,000,000 (£60,000,000 from sales within Australia) in the 1936-37 season. This serious drop in values naturally affected the pastoral industry in Queensland.

Since last August, seasonal conditions have been variable in the wool-growing areas. At that time, a large proportion of the pastoral districts was passing through a very dry period. In fact, up to April the position in many parts of the western country was serious. Widespread rains in May—in some districts record falls were registered—eased the position considerably, especially in the more southerly regions. In the north-western sheep country, the feed position is generally good. On much of the Barcoo country, drought more or less continues with varying severity, but in most other parts of the Central-west pastures are reasonably satisfactory.

Wool prices have continued to slump since the beginning of the year's Brisbane sales. The September average was 14.90d. In the October series, it dropped to 14.18d. The earlier May average—11.53d.—showed a slight improvement. The June averages were lowest of all, and in the second series of that month the average price for greasy wool was 10.60d. per lb.

The total number of bales catalogued for the year was 500,571, of which 483,561 were sold for a realisation of £7,626,056. For comparison, the previous year's figures were 492,266 bales for a total realisation of £10,690,878.

The demand for both mutton sheep and lambs has continued firm and at payable prices throughout the year. Lamb values especially have compared favourably with Southern market values. The number of lambs sold for slaughter was about 72,500, of which 43,500 were selected for export. Interest in fat-lamb raising is growing as a result of departmental policy, and a large expansion of the industry is in prospect.

The fat-lamb scheme which has been in operation for some years, and in furtherance of which sheep of British breeds have been purchased annually by the department and allotted to approved farmers, has exerted a beneficial influence on lamb-raising flocks. Under favourable conditions lambs have been fattened and sold when twelve weeks old, while others of similar breeding under unfavourable conditions were not ready for market until after they had been shorn as weaners. An average price of £1 0s. 5d. was obtained.

High-quality lambs have been exhibited at Brisbane, Toowoomba, and other important agricultural shows, and have been illustrative of the high-quality lamb which can be produced in Queensland. In the All-Australian export lamb competition conducted by the Australian Meat Board, Queensland gained a first award in the September series, and was third highest in points for the competition as a whole.

The prospects for further extension of fat-lamb raising are very encouraging.

In addition to the fat-lamb scheme, sheep-breeding trials are in progress under departmental supervision in different parts of the State.

Sheep values have declined in sympathy with the drop in wool values.

The farmers' wool scheme continues to operate to the advantage of the small flock owner.

Merino breeders have displayed the keenest interest in the improvement of sheep and wool standards. Culling of the ewe flocks is practised regularly, and the importance of selecting suitable rams is recognised generally. In spite of adverse seasonal circumstances in some districts, actual losses during the year have been light, while a steady natural increase has been maintained.

The health of the flocks of the State generally has been satisfactory, and no serious outbreak of disease has been reported.

Considering the declining values, wool clearances have been satisfactory, leaving only a light carry-over for the coming season.

Present seasonal conditions provide ground for balanced optimism in respect of the immediate future of the pastoral industry.

GENERAL AGRICULTURE.

For the farmer, it was generally a favourable year. Pasture and water supplies were ample for all requirements, but, as can be expected in a State with such a wide diversity of climatic conditions, there was a considerable variation in seasonal circumstances.

The heavy summer rains received throughout the main agricultural regions from late October to February assured an abundance of grazing and fodder crops, and permitted the conservation of a larger reserve for livestock than had been possible for some years.

Winter Cereals.

Subsoil moisture reserves were inadequate for the early sowing of any appreciable acreage of wheat. Some crops sown in April, however, made fair progress, especially on fallowed land, and were in ear by August. The June rainfall was barely sufficient for rapid germination and strong growth. Rains in August greatly benefited all crops, saved the wheat at a critical stage, and ensured the fair yields which were ultimately bagged. Storms in October and November delayed harvesting, and conduced to the development of rust, a late infestation of which became serious. Rust-resistant varieties and other improved grain wheats introduced by the Department now cover half the total area cropped. The estimated area planted—402,000 acres—was a considerable advance on the sowings of previous years, chiefly because of the new land being brought into production on the Western Downs. Harvesting was completed by December, the estimated yield of 3,950,000 bushels being regarded as satisfactory when considered in relation to the seasonal conditions experienced.

A large area was again sown to oats, principally for grazing by dairy cattle. Barley was again grown extensively on the Darling Downs, both for malting and stock feed, and a fair average crop was reaped.

SUMMER CROPS.

Atherton maizegrowers had a favourable season. In the south, although summer rains were substantial, their patchiness, combined with excessive heat soon after tasselling, reduced yields considerably. Early-sown crops generally were successful, both in respect of yield and value; but main crop sowings produced under-average returns. In the drier agricultural regions, farmers are taking a greater interest in the cultivation of grain sorghums—especially on the Darling Downs, where short-stemmed varieties of grain sorghum have been successfully harvested with standard wheat harvesting machinery.

The season was very favourable for summer fodder and grazing crops.

Peanuts.—Peanut growing is continuing to expand in the South Burnett, and, to a lesser extent, in the central farming districts and on the Atherton Tableland.

Kingaroy peanuts continue in strong demand on both intra- and inter-State markets.

Substantial additions have been made to the storage silos at Kingaroy.

Tobacco.—Seasonal conditions during the 1937-38 season were generally unfavourable for the production of first quality tobacco leaf. In places where the climatic conditions were suitable, some very fine leaf was grown, for which a new top price of 54d. per lb. was realised. Competition has been keen among buyers and prices showed an advance of from 8 to 12 per cent. on last year's figures. Consequently, higher values compensated in some measure for the effects of seasonal adversity.

An aggregate of 3,743 acres was planted, from which a return of 2,049,000 lb. of saleable leaf is estimated.

Tropical Agriculture.—The year's activities of the Bureau of Tropical Agriculture at South Johnstone covered a wide and varied field. Investigational work included pasture research, soil investigations, tropical fruit trials, maize-breeding and fertilizing, grass varietal and green manuring tests and tobacco plant breeding.

The completion of the new laboratory and other structural improvements have greatly facilitated the work of the Bureau.

Considerable developmental work was also undertaken.

Other Crops.—Except where irrigation was practised, potato-growers had an unsatisfactory year. The spring crop wilted through insufficient moisture during early stages of growth, although heavy rains fell when the crop was approaching maturity. February plantings were affected by hot, dry weather, which was the chief factor in reducing yields to a point lower than the average.

The cultivation of other farm crops produced generally good results.

Prices for farm produce have remained at fairly satisfactory levels throughout the year, particularly in respect of wheat and maize.

Substantial progress is being made with the experimental plot work conducted by the Department throughout the agricultural districts of the State, attention being given to field problems associated with tobacco, wheat, maize, sorghum, peanuts, potatoes, pastures, and other farm crops of prospective economic value.

SUGAR.

Following on the record cane and sugar harvest of 1936, it was early anticipated that the 1937 yields would be substantially lower. Not only did the cane production exceed early estimates, but the crop proved to be unusually rich in sugar, so that the aggregate sugar yield actually surpassed that of 1936, and a new record high production was achieved. The comparative crop data for the two years are:—

	1936.	1937.
Cane harvested	5,171,516	5,139,679
Sugar produced (94 n.t.) ..	744,261	762,794
Acres harvested	245,152	249,782
Tons cane per acre	21.1	20.6
Tons sugar per acre ..	3.04	3.05
Tons cane per ton sugar ..	6.94	6.75

The "tons cane per ton of sugar" figure for 1937 is the lowest yet recorded in Queensland, being a substantial advance on the previous best of 6.83, established in 1930.

Of the total sugar yield 183,869 tons constituted "excess" sugar—that is, sugar produced by mills in excess of peak year allotments. This quantity was, therefore, disposed of at ruling export rates. The balance (578,925 tons) was marketed in the proportions—

58.9232 per cent. for Australian requirements.

41.0768 per cent. for sale abroad.

The proportion of the total crop exported—421,673 tons—was appreciably higher than that of the previous year. Fortunately, a substantial amount of this sugar was marketed before the International Sugar Agreement came into operation, otherwise the Australian quota would have been exceeded. The average price for No. 1 pool sugar was £17 11s., as compared with £17 1s. 4d. for 1936. The marked improvement in price over the 1936 figure is due in a large measure to the improved returns from sugar sold overseas; the average net price for this sugar was £8 6s. per ton, as against £7 19s. for the previous season.

Preliminary estimates for the 1938 cane crop are now completed, and it is anticipated that the cane to be harvested will exceed that of the 1937 season; the early figure is 5,200,000 tons, which, if attained, will constitute a new record. It is doubtful, however, if this estimate will be realised, because of the prolonged drought conditions in parts of the Far North; moreover, because of late growth of crops in other areas, a low average c.c.s. in cane is indicated. A forecast of 740,000 tons of sugar would therefore appear to approximate the probable return.

Thus the Queensland sugar industry maintains a level of production in the vicinity of 750,000 tons of sugar annually, and the tendency is apparently for an increase in total production, rather than a decrease. Though it has been stated on frequent occasions that favourable seasons may be credited with at least a proportion of the recorded increase, one is inclined to the belief that good yields are now being obtained both in favourable and unfavourable years. There seems to be a decided smoothing out of seasonal influences, which can be attributed only to improved farming methods on the part of canegrowers generally. For two successive years the yield of sugar per acre has exceeded 3 tons, as compared with the average at the beginning of the century, which was below 1½ tons.

A further attempt to deal with what is regarded by growers in some areas as an inequitable distribution of the returns from the cane crop, because of the incidence of the 1929 peak year scheme, was made during March of this year. Representatives from all mill areas met in conference, which was convened by the Honourable the Premier (Mr. W. Forgan Smith, LL.D., M.L.A.). The problem was freely debated, over several days, but no formula could be devised which was acceptable to a substantial majority of the representatives.

The overseas sugar position has not reacted favourably to the consummation of the International Sugar Agreement, as many had hoped or wished. Though some improvement in ruling values was reported for a time, current market quotations are disappointingly low in the eyes of the sugar producer in this country.

An interesting attempt to deal with excess sugar production has been put forward recently, when it was proposed to treat low-grade juices from the crushing mill in a power alcohol distillery erected in close proximity to the mill, and operated in conjunction with it. Though such a suggestion is worthy of close investigation, it does not appear likely that it will offer relief to canegrowers unless the present overseas sugar values are not maintained. In the event of the overseas sugar quota being exceeded, however, it may provide an outlet for some of the surplus cane. But it is nevertheless true that much of the molasses produced by the industry at the present could be diverted for this purpose in the first instance, and this would provide a much cheaper source of carbohydrate for fermentation purposes than potential raw sugar from other syrups or juices.

The Bureau of Sugar Experiment Stations is experiencing increasing demands on its services to assist producers in both field and mill. The industry has attained a high state of efficiency in production and manufacture, and is fully seized with the importance of maintaining such standards, if production costs are to be reduced to a minimum. At the present time disease control in certain areas has again become a serious problem, and a concentration of effort is being made in an attempt to avoid losses from this cause. The production of new varieties of improved yield quality and disease resistance is being pursued, while importations of likely canes from New South Wales and overseas is also receiving due attention.

AGRICULTURAL RESEARCH.

There has been a definite expansion in research activities within the Department of Agriculture and Stock, these activities being directed to the solution of some of the many perplexing problems with which the primary producer is faced. Considerable progress has been made in certain directions, one of the most recent and pleasing successes being achieved in connection with the pineapple industry. As a result of the work of the Department, many improvements in pineapple production methods have been introduced, thus materially enhancing the prospects of that branch of primary production.

A general survey of investigational work undertaken in the course of the year—and which included agricultural, botanical, entomological, and pathological studies—together with an account of the field operations of his division, is contained in the report of the Director of Plant Industry (Research).

FRUIT.

Most fruitgrowers had an exceptionally good year. Record harvests were the general experience in the deciduous fruit areas, and fair to good prices ruled. Apple exports increased by nearly 50 per cent.

From the Stanthorpe district the total tonnage of fruit marketed was 24,200 tons, compared with 17,000 tons in the previous year.

Notwithstanding storm damage in some districts, banana plantations yielded well, and prices were better than in recent years.

The banana industry has become more or less stabilised at a reasonably profitable price level. The aggregate area under crop last year was 13,800 acres; and of this total, 9,880 acres were in bearing and produced 531,000 cases. An aggregate of 3,423 acres of new land was planted. It is estimated that additional plantings extending over 2,500 acres will be made in the coming year.

Pineapple production is expanding rapidly. The total cutting in 1936 was 830,000 cases; in 1937 the harvest aggregated 884,418 cases; and it is probable that at least 1,000,000 cases will be marketed during the present season. The winter crop, which is now being harvested, is expected to equal the summer crop.

There are now 1,422 growers farming an aggregate area of 5,885 acres.

In addition to marketing fresh fruit, growers have acquired a half-share in the largest cannery in the State, so as to have some control over the marketing of their processed products.

Growers of papaws, passion fruit, and strawberries, and other fruits had a successful and profitable year.

The prospects for the future of the whole fruit-growing industry may be regarded with optimism.

COTTON.

Cotton-growers experienced another unsuitable growing season. It is not expected that the yield for the year will exceed 11,000 bales of lint, each of 500 lb. net weight, as compared with 8,519 bales last season.

Standards of cultivation and crop thinning practised by the average farmer show an improvement on the field practices of the previous season.

This season's cotton crop returns, although affected adversely by unfavourable climatic conditions, have demonstrated the value of cotton in the cropping rotations of farms in the south-eastern part of the State.

Ample evidence of the value of growing cotton in rotation with grassland was again obtained by farmers individually, and also by experiment. It is confidently anticipated that this practice will be applied on an increasing scale in the future, to the benefit of both cotton yields and the productivity of the pastures.

Medium-stapled varieties which were among recent importations to meet the requirements of Australian spinners have again yielded promising results.

The acreage of previous years will be maintained and in some districts increased. This is of particular importance, for the coming season will be the last one provided for under the existing system of Commonwealth bounty, and it will be necessary to demonstrate that sufficient raw cotton of suitable types can be produced for the Australian spinners' needs, in order to obtain a satisfactory extension of the present arrangement.

Excellent winter rains have ensured ample subsoil moisture, so that only a planting rain is required to give the coming season's crop a good start. This reserve of subsoil moisture should assist markedly in preventing any damage to the crop through hot, dry periods. Growers are fully aware of this distinct advantage, and this factor will probably influence an appreciable extension of acreage under cotton.

DAIRYING.

Better seasonal conditions, less worry from disease, and a higher average price were the chief factors in making the year a fair one for dairy farmers.

Dry weather prevailed throughout most of the dairying districts until late in 1937. Although good rains had fallen by the end of December, recovery was not rapid. The industry has since recovered to a substantial extent from the setback caused by drought and the widespread occurrence of three-day cattle sickness in the two previous years. In comparison with those years, production has greatly increased. A marked improvement in quality was another pleasing experience, a much higher percentage of export butter being graded as "choicest."

The position of the cheese industry has been investigated with the object of devising a plan for a general improvement in quality and conditions. Some improvement has already been reported.

The industry has already derived considerable benefit from the activities of the Dairy Research Laboratory. Among other immediate aims is a system of standardisation designed to bring the manufacture of butter to a closer approximation of the standards of composition prescribed by the Dairy Produce Acts, and in a way which will lead to greater economy in factory operation.

The Australian Dairy Products Stabilisation Scheme has, to a measurable extent, achieved the purpose of its sponsors. The effects of the scheme have become more manifest. Increased stability in the industry has provided a basis on which regular dairy farming programmes can be planned.

The widespread popularity of milk bars is having an important influence on the progress of the industry, as well as being of great value from the standpoint of public health and efficiency.

With the improvement in seasonal conditions, the number of dairy herds submitted for testing has increased. Through this free testing service and the granting of a rail freight rebate on approved sires, dairy farmers are given practical assistance in the improvement of their herds. Many more cows have been entered for the advanced register of the several herd book societies, and some excellent production records have been listed.

The veterinary services provided under the Dairy Cattle Improvement Act are being availed of to an increasing extent. The extension services of the Department now include the regular organisation of field days for dairy farmers, at which general instruction in modern dairy practice, and the principles of animal husbandry and of rural economics, is given.

The gazettal of cream delivery routes and improvement in transport facilities and services have resulted in the general raising of the standard of quality of cream supplies.

In the far northern dairying districts, the industry continues to expand in respect to both volume of production and territorially.

Generally, the value of the contribution which the dairy industry makes to the national welfare is immense.

Throughout the year fair prices have been maintained, with the London market particularly firm. The higher prices ruling in London have been another encouraging factor in dairying progress. Australian butter, at times, actually sold at a premium over Danish, which, up to this year, had always held a dominant place among British butter imports. The London price rose last October to 158s. (sterling), and throughout the season was not lower than 117s. a cwt.—The market value in March of this year. In the previous season the top London price was 132s. a cwt., and in February of 1937 dropped to 94s. a cwt.

The statistical position of the industry in 1938 (with production for the previous year in parentheses) is shown in the following table:—

	1937-38.	1936-37.
Production of Butter	114,691,039 lb.	(84,401,372 lb.)
Production of Cheese	12,970,605 lb.	(7,771,926 lb.)
Butter exported	62,015,072 lb.	
Cheese exported	3,336,696 lb.	
Number of Butter Factories in the State	56	
Number of Cheese Factories in the State	53	

The economics of the dairy industry generally are discussed in my report as Acting Director of Marketing.

As a result of the recent rains, a productive spring is now assured, and if a normal season ensues a new peak in butter factory output should be attained in the coming year.

PIG RAISING.

Pig raising is progressing rapidly, and is recovering from the effects of the unfavourable climatic conditions during 1936 and 1937. Improved seasonal conditions during the summer resulted in an unprecedented demand for breeding and store pigs. On present indications, it is probable that record numbers of porkers and baconers will be marketed during the 1938-39 season. Values for both classes have been the best since 1929. The demand for heavy baconers for export has induced exporters to provide a flat rate for pigs from porker to a heavy bacon weight, which suits farmers who cannot obtain enough pigs to cope with their food supplies, as they can now profitably carry pigs to heavier condition.

During the summer, prices went up to 8d. a lb. live weight for weaners and light stores, the market value of finished pigs being 5d. to 6d. a lb. dressed weight.

Concurrently with an increase in oversea shipments of pig products, there has been a steady development of the domestic market. At the present time, there is actually a shortage of pigs of suitable quality in the State.

The Queensland pig industry now approximates £1,500,000 in annual value, and there is ample scope for the further expansion of this important branch of animal husbandry.

One of the most important developments in the industry in the course of the year was the adoption of the pig carcase standards as established in the United Kingdom for imports from Australia. The export baconer class at the 1937 Brisbane Show was judged in accordance with the new method of appraisal.

There is accumulating evidence of the value of the correspondence course in pig raising which was instituted by the Department some years ago, and which has since continued with marked success. The present enrolment is 101.

At the close of the year, prices for pigs of all grades were good and prospects for the industry very encouraging.

THE POULTRY INDUSTRY.

The relatively high price of poultry foodstuffs during the first half of the period under review was the chief cause of the slight decline in production, as revealed by Egg Board figures. A total of 4,529,846 dozen eggs were marketed through Board channels, as compared with 4,940,763 dozen in the previous year. Overseas exports were consequently less, the total being 1,234,380 dozen.

Egg values in Queensland were slightly higher during the year. Export returns were satisfactory, and somewhat enhanced prices are in prospect for next season's shipments.

Table poultry also sold at higher rates—much higher, as a matter of fact—than they have been for some years past. The natural effect of the better market demand was an increased interest in this section of the industry, and as a result hatcheries report a constant inquiry for chickens. From this it may be assumed that flocks are increasing considerably, although the full effect of the heavy purchases from hatcheries will not be apparent for some time.

In the course of the year legislative provision was made for the registration of hatcheries.

Although hatchings have been restricted to some extent, breeders are giving more attention to quality, to the general benefit of the industry.

Poultry-feeding experiments, of which particulars are given elsewhere in this report, were continued at the Animal Health Station.

LIVESTOCK.

The Chief Inspector of Stock reports that hereditary unsoundness of horses have decreased considerably since the inauguration of the system of examination and registration of stallions under legislative enactment.

There is a shortage of army remounts, although prices have been profitable to breeders and overseas buyers have operated freely. Farm horses, particularly Clydesdales, have been in constant demand at high values, but the market has not been fully supplied. On the Darling Downs suitable draught horses have realised up to £45 a head. Horses exported numbered 2,293.

There was a general increase in the classes of livestock sold at Cannon Hill. Tables of yardings and prices are set out elsewhere in this report.

The requirements of the Slaughtering Act have been satisfactorily observed. Shop inspections during the year numbered 2,851.

The general stock inspectional work of the year is reviewed in the Chief Inspector's summary which is incorporated herein.

ANIMAL HEALTH.

From a veterinary point of view, the year was largely free from anxiety.

A pleasing experience was the ever-increasing demand by farmers on the services of the Animal Health Stations at Yeerongpilly and at Oonoonba, near Townsville. The work of these stations consists largely of providing advisory services to stockowners throughout the State, and to keeping them well-informed on methods of disease control and treatment. In addition, certified laboratory products for either the prevention or treatment of animal ailments are made available.

Other important activities of the year included research work and veterinary investigations and surveys, relating particularly to the incidence of diseases and parasites, and suspected causes of mortality among stock.

A survey of the buffalo-fly position produced evidence that there has been no appearance of the fly east of the Leichhardt River, and that its natural spread has not been further inland than approximately 100 miles from the Gulf coast.

The heavy rain which has fallen over the greater part of the State during the last six months, and which was preceded by a lengthy dry spell, has caused a fresh infestation of cattle ticks and a widespread occurrence of tick fever in Queensland.

There has been no serious recurrence of ephemeral fever or three-day sickness of cattle which was so prevalent last year.

A general appreciation of the livestock position from a veterinary viewpoint is contained in attached reports on the administration of the animal health services of the Department, and also in the report of the Veterinary Adviser.

STALLIONS REGISTRATION.

In support of the claim that the horse-breeding industry has benefited considerably as a result of the introduction of "*The Stallions Registration Acts,* 1923 *to* 1934," members of stallion boards operating during the year under review reported favourably, not only on the quality of the sires paraded for examination, but also on the large number of really high-class horses examined in the gazetted stallion districts. In all, 608 stallions were submitted for inspection, of which 379 represented the heavy classes, 151 the bloods, 61 the ponies, and 17 the trotters.

Of the heavy classes inspected, approximately 16 per cent. were rejected, unsoundness being the cause of 33 per cent. of the rejections. In the blood class, approximately 13 per cent. were rejected, unsoundness being the cause of 33 per cent. of the rejections. In the pony class approximately 11 per cent. were rejected, unsoundness being the cause of 44 per cent. of the rejections. In the trotting class, all horses produced were passed by the examining boards.

Of the 608 stallions examined, the rejections approximated 15 per cent., 67 per cent. of which were rejected because of faults in type or conformation. Whilst the latter percentage seems rather high, it is understandable when it is known that the stallion boards had extended their itineraries to districts in which examinations had not been conducted previously. In addition, stallion boards have taken into consideration the number of years during which the Act has been in operation, and the examinations are, as a consequence, stricter than was the case in the years immediately following the passing of the relevant legislation.

WILD LIFE PRESERVATION.

In the last session of Parliament legislation was introduced to provide effective means for the protection and propagation of native fauna in this State.

"*The Fauna Protection Act of* 1937" became operative on the 1st January, 1938, and repealed "*The Animals and Birds Acts,* 1921 *to* 1924." In the new legislation, the co-operation of local authorities in an advisory capacity is provided for, and the powers of protection are widened to co-opt the services of officers of the Forest Service and Lands Department, in addition to police officers who are honorary protectors, *ex officio.*

In the past it has been found difficult to check illicit dealing in native fauna within the State, but it is necessary under the existing law for owners of aviaries to apply for and obtain registration of their aviaries, and permits must be obtained for the movement of any fauna within the State. Ample safeguards are provided to deal with movements of fauna interstate and overseas.

Royalty at the rate of 10 per cent. on a fixed valuation is payable on the sale of any protected fauna in respect of which permission is granted for that sale. These sales, in the main, are only permitted in respect of birds kept in aviaries, or fauna for which an open season has been declared. In the past, royalty payments have been confined to the sale of opossum skins during an open season.

Penalties for the taking of protected fauna have been considerably increased, and very stringent provisions are included in the Act to prevent illegal traffic in skins.

An outstanding provision is that which ensures the permanent protection of the koala (native bear). In the past this was dealt with by Order in Council, but the koala is now protected for all time.

The establishment of sanctuaries suitable for the protection and propagation of fauna is the continued policy of the Government, and during the year under review 15 sanctuaries, with an aggregate area of 118,100 acres, were constituted by Order in Council.

As a result of the efforts made for the protection of fauna, many rare native species are increasing in number, and reports indicate that the opossum and koala are again becoming plentiful in many districts.

Flora Protection.—The Department of Agriculture, in conjunction with the Main Roads Commission, has actively pursued a policy of protection for native flora.

The Department of Public Lands has also co-operated in the reservation of scenic parks in suitable areas.

AGRICULTURAL CHEMISTRY.

The greatly increased amount of work performed by the Agricultural Chemist's Branch of the Department during the past year indicates plainly the appreciation of the value of scientific investigation by primary producers.

By analysis, the composition of the many commercial stock foods, pasture grasses, and edible shrubs has been obtained, but knowledge of the digestibility of these foods is required in order to obtain best results with the feeding of stock. Chemists of the Department are now engaged on this work.

A committee comprised of senior officers of the science services of the Department has been appointed to investigate, by feeding experiments and chemical analysis, known and alleged poison plants, in order that, when the degree of toxicity of such plants is known, sound methods can be suggested of decreasing loss of stock through plant poisoning.

Through a published extensive soil survey of the pineapple soils of the Beerburrum, Glass House Mountains, and Beerwah districts knowledge has been obtained of the properties of the different soil types of these districts, and this will enable prospective pineapple growers to follow suitable cultural operations on their particular soil type. Similar soil survey work has been extended to the Nambour, Woombye, and Palmwoods pineapple plantations.

PURE SEEDS AND RELATED LEGISLATION.

The interests of primary producers as purchasers of seeds for sowing, fertilizers, veterinary medicines, pest destroyers, and stock foods continue to be fully served by the Department of Agriculture and Stock, which is ever vigilant in its administration of the powers bestowed by the relevant legislation.

ST. LUCIA FARM TRAINING SCHOOL.

In the course of the year fifty-nine boys completed their training in the rudiments of agriculture and animal husbandry at the St. Lucia Farm Training School. Of that number, fifty-six were placed in suitable positions in the country, chiefly through the Juvenile Employment Bureau. Three were awarded scholarships tenable at the Queensland Agricultural High School and College.

BEE-KEEPING.

No serious bee disease has been reported. The honey situation is dealt with in my marketing review. Inspectional and advisory services in relation to agriculture were continued satisfactorily throughout the year.

PUBLICATIONS.

An account of the informational services of the Department is given in the report of the Editor of Publications.

Among the more important publications of the year were Volume III. of *The Queensland Agricultural and Pastoral Handbook* and *The Principles of Botany for Queensland Farmers. The Queensland Agricultural Journal* has entered on its forty-second year of publication, and its circulation for the *twelve months reached approximately* 112,000 copies. *The Weekly News Bulletin* has completed its second year.

LIBRARY.

The re-organisation of the central library with the object of increasing its usefulness is approaching completion. Many new and valuable volumes have been added. Exchange services have been extended, and the Department now possesses an excellent collection of literature relating to the land industries. The resources and facilities of the library are being used to an increasing extent as they become better known.

IN MEMORIAM.

During the year, the Department suffered the loss by death of two distinguished officers—A. Ernest J. C. K. Graham, formerly Under Secretary and Director of Marketing, and Alfred E. Gibson, Director of Agriculture—whose passing is recorded with very deep regret.

The late Mr. Graham's knowledge of the primary industries was as varied as it was sound, and he was an accepted authority on agriculture, animal husbandry, modern dairy factory practice, and rural economics. He was a member of the Council of Agriculture, the Standing Committee of the Australian Agricultural Council, the Commonwealth Council for Scientific and Industrial Research, the State Dairy Board, the Australian Dairy Council, and of the Faculty of Agriculture within the University of Queensland

The late Mr. Gibson was a member of the Executive of the Council of Agriculture and was deputy for the Director of Marketing on several commodity marketing boards.

The lives of both gentlemen were devoted to the service of the State, and their work has had a pronounced influence on the development and progress of rural industry in Queensland.

GENERAL.

The progress made with the plan for co-ordinating the whole of the functions and services of the Department is discussed in the report of the Science Co-ordinating Officer.

Complete accounts of the work of the Department for the year just ended are contained in the reports of the Science Co-ordinating Officer; the Director of Plant Industry (Research); the Director of Agriculture; the Director of Cotton Culture; the Director of Fruit Culture; the Chief Inspector of Stock; the Director of the Animal Health Station; the Director of Dairying; the Agricultural Chemist; the Officer in Charge of the Seeds, Fertilizers, Veterinary Medicines, Pest Destroyers, and Stock Foods Investigation Branch; and the Acting Director of Marketing—all of which are incorporated herein.

I am, Sir,

Yours faithfully,

R. WILSON,

Acting Under Secretary and Director of Marketing.

REPORT OF THE SCIENCE CO-ORDINATING OFFICER.

During the past year the duties of the Science Co-ordinating Officer have involved, in the main, two types of activities—namely, that of reorganisation of scientific and technical services within the Department of Agriculture and Stock and co-ordination of such activities with those of other State and Commonwealth authorities; and the organisation and co-ordination of investigations in relation to immediate specific problems involving technical and scientific, practical, and economic considerations directed towards new or more intensive State developments.

The general plan of reorganisation and co-ordination of activities within the Department of Agriculture and Stock as foreshadowed in the last Annual Report has been elaborated in detail and completeness, and it is now anticipated that the whole plan will be implemented during the latter half of 1938. That plan lays the basis for co-ordination and co-operation of inter-departmental and extra-departmental (State and Commonwealth) activities relating to scientific and technical, practical and economic aspects of the problems of primary production in Queensland with those of the Department of Agriculture and Stock. The operations of the Division of Plant Industry (Research) during the past year have been carefully and critically assessed. That Division inaugurated as a preliminary and experimental step has served to indicate the value of the projected reorganisation, of which it forms a part. An analysis of the activities of that Division, when considered in their incidence on the practical as well as scientific aspects of plant-industry, reveals a very marked advancement in the efficiency of the general services relating to that field and in the direction of a more effective analysis of the problems involved. There has become manifest a recognition of the need for a precise definition of each problem and attention to the scientific and technical, practical, and economic aspects on a conjoint basis. Notable in that connection have been the effects of the inauguration of biometrical services within the Division. That has resulted in a much increased efficiency in relation to experimentation, and that advancement must continue to have incidence on the value of results derived from experiments designed to satisfy all aspects of the problems involved.

The application of the ideas which underlie the plan of projected reorganisation of services has been utilised during the year in relation to specific problems, and the results of this experimental effort strengthen the belief that the implementing of the new plan of organisation within the Department of Agriculture and Stock and in relation to the activities of other Government Departments concerned with any aspects of problems of a primary industrial order, semi-governmental and extra-governmental State activities and those of the Commonwealth Council for Scientific and Industrial Research, will provide Queensland within a few years with a most effective means of meeting the developmental needs of the State.

Among such experiments may be mentioned that concerned with the fattening of cattle in tropical coastal areas. During the year, the Department of Agriculture and Stock has continued the scientific investigations and experiments designed to determine the possibilities of the tropical coastal lands of the State in relation to cattle fattening and the chilled beef trade. The experiments were devised and have been carried out with a view to providing reliable data which would serve as a basis for decisive determination of the possibilities of such an industry, and for a critical assessment of any projected developmental undertakings in that direction in terms of practice and economics. Considered from the aspect of State interests in all their implications, these activities have been regarded as ranking among the most important undertaken by the Department of Agriculture and Stock in recent years. They are interpreted and accepted as having incidence on the following important matters:—

(*a*) Maintenance and extension of the chilled beef trade, by demonstrating means by which young beef conforming to the competitive standard demanded in terms of age and quality by overseas markets could be produced in Queensland and the production of such commodities increased.

(*b*) The economic utilisation of tropical coastal lands for an industry which offered possibilities of relief from the economic difficulties created by a one-crop regional industry such as sugar, and at the same time opening up possibilities for the utilisation of accessory and by-products of such crop—cane tops, molasses, &c.—on a basis of mixed farming and/or contiguous intensive production.

(*c*) General development and land settlement in the tropical areas of the State, and in that connection maximum of efficiency of land-utilisation and greater economic contentment and security of settlers.

The results of the experiments suggest that it is a practicable and economic proposition to fatten two-year old cattle within a period of twelve months in that area and to produce three-year old cattle with a dressed carcase weight of 650 lb., which is the standard regarded as ideal on the overseas market. In the investigations carried out by the Department of Agriculture and Stock attention has been given to the selection of cattle for experiment, the matter of grasses and artificial pastures, rotational practice and pasture management, nutritional values of grasses and pastures and relating of the same to increased weight of the cattle per month, intensity of stocking desirable, problems of transport—and particularly in relation to the elimination of bruising—detailed observation of treatment of the experimental cattle from the time of arrival at the abattoir, collation of biophysical and biochemical data bearing on the quality of the beef, assessment of quality at the Smithfield market, &c., &c. These among other factors indicate the significance attached by this Department to the experiment and the importance of the problem to the State. The mode of attack on this problem represents the basis on which organised, co-ordinated and co-operative effort in relation to the scientific, technical, practical, and economic aspects of individual problems of major importance to the State is to be effected under the plan of reorganisation of scientific, technical, practical and economic services. In this experiment the services of officers of the Department of Agriculture and Stock, University, and Queensland Meat Industry Board, as well as of private individual interests, have been involved.

The experimental work is being continued, and the present programme includes in addition to activities directed towards conformation and consolidation of previous results other aspects, such as transfer of cattle at a younger stage from the breeding to the fattening areas, introduction of legumes into the pastures, &c. The results of the experiments have attracted very considerable and wide interest, which has manifested itself in the Tropical North in a movement to implement cattle fattening in the coastal area on an extensive scale. This involves the Department of Agriculture and Stock in very definite responsibilities. For example, the size of holdings in relation to the economics of cattle-fattening is a matter of basic importance to the projected industry. The interests of the State involve two matters—namely, (i.) increased quality and quantity of production, and regularity of supply—in short, a sound and progressive extension of the beef industry, (ii.) increased land settlement and efficient land utilisation on a basis of economic contentment, which matter includes consideration of the demands of a living area.

Another type of experiment is exemplified in the general investigations which have been initiated in connection with the nutritional value of foodstuffs utilised in animal rations. These investigations have been related to a limited number of types of pasture plants and protein concentrates. This work is of a laborious character inasmuch as it involves actual feeding trials in addition to preliminary and later chemical analyses which must be related to biochemical data. This work is of a foundational order, and an active extension of it is projected in the plan of reorganisation of the Department. During the past year these nutritional investigations have been concerned with cattle fattening, dairying, sheep, pigs, and poultry. One significant aspect of the work has been that of its incidence on the very important problem of by-products—a matter that requires urgent economic consideration. Inasmuch as the prices of our primary products lie, in so far as the primary producer is concerned, outside our control, the margin of profit is, in the ultimate, bound up with the matter of reduced costs of production. In this connection an economic analysis of the problem of by-products associated with our primary industries is of fundamental concern, and in that connection intensive and extensive nutritional investigations are essential. It is noteworthy, again, that the nutritional investigations carried out during the past year within the Department of Agriculture and Stock, have established contact, for purposes of experimentation, between the scientific services of the Department and such industries as that of sheep. This is a matter of considerable importance, as it is essential in the interests of the work of the Department and with a view to ensuring effectiveness of effort that not only should confidence on the part of pastoralists in the work of the State Department of Agriculture and Stock be maintained, but it is also desirable that there should develop that spirit of co-operation, which can materially assist the Department in carrying out experimental work on an economic and effective basis in the field and which facilitates the problem of relating results to definite areas.

Another set of activities and one that illustrates the value of co-ordination of inter-departmental and extra-departmental activities is exemplified in the work now being prosecuted in relation to the problem of soil erosion. There is operating in Queensland a State Soil Erosion Committee representative of various sections of the Department of Agriculture and Stock, Department of Public Lands, and the University of Queensland. As a preliminary to a general attack on this problem an initial survey is being effected through the services of field officers of the Department of Agriculture and Stock and the Department of Public Lands. When that has been completed and the projected plan of organisation of scientific and the technical services has been implemented, it will be possible to attack this problem on a State-wide basis and by means of field experiment, demonstration, and educational methods to produce corrective results. In the meantime that aspect is not being altogether neglected, in that the officers of the Department of Agriculture and Stock concerned with the literally agricultural activities are carrying out experiments in various localities. The importance of the problem is fully realised, and it is anticipated that big-scale operations will be inaugurated within the very near future.

Appended is the report of the Animal Nutrition Research Officer, Dr. M. White.

E. J. GODDARD,
Science Co-ordinating Officer.

REPORT OF THE ANIMAL NUTRITION RESEARCH OFFICER.

In the past, livestock feeders in Queensland have relied entirely on the chemical analyses of foodstuffs in formulating rations. These, coupled with observations on the rate of growth or milk production, constituted the sole means by which the producer was able to gauge the usefulness of his crops. Where more detailed information on similar crops had been gleaned from researches in other countries the errors of this system could be partly rectified, but the wide ranges of soils, climate, and rainfall which exist in Queensland, coupled with the development of new varieties to suit such conditions, have given rise to a definite indication that a more fundamental basis of evaluation is necessary. Furthermore, Queensland has numbers of plants which do not grow in the older agricultural countries of the world, and the need to obtain complete information on their usefulness is being continuously felt. Without a set of figures showing how much of the food in the plants is digested by the animals it is impossible to accurately formulate rations or grazing instructions which will approximate to the requirements of those animals. Without a complete examination of the protein fraction to determine the quality as well as the digestibility of it there can be no assurance that a so-called balanced ration is really adequate for good health and maximum development or production.

Fortunately, Queensland is able to produce a great variety of concentrated foods which have been extensively investigated elsewhere, but there still remain the fundamental pastures of the country and a number of edible shrubs which grow where it is either impossible or impracticable to cultivate crops. Over large areas what are virtually pure stands of certain grasses exist—e.g., Mitchell grasses. Practical results show that these can support life and enable successful reproduction to take place, but it is still unknown how much more useful these pastures might prove at any or every stage of their life cycles if their biological value were raised by (*a*) selecting strains, (*b*) better management, or (*c*) by being supplemented with other foods either grown or bought.

It is the last possibility which is of greatest importance in periods of stress. Such supplementing must be done economically if it is to be done at all. How can it be done without an accurate knowledge of the make-up of both pasture plants and the supplements to be administered?

The Department has begun a series of trials to determine the digestibility of the food groups in a number of concentrates and roughages. The biological evaluation of these foods will form the subject of later work.

The selection of foods to be examined has been narrowed down to (*a*) standard pasture plants—e.g., fodder canes, lucerne, Rhodes, paspalum, para, Mitchell, and Flinders grasses, (*b*) concentrates rich in protein.

The trials so far conducted embrace strains of Rhodes grass from cultivated soils—e.g., Rhodes grass in cotton rotation, lucerne, cocoanut meal, and cottonseed meal.

Sufficient data for a full statistical analysis will involve work over a period of years, but already some confirmatory work has given clear-cut issues which warrant field trials on a extensive basis. For example, standing Rhodes grass hay may be utilised effectively by the following procedures:—

(i.) On comparatively flat land carrying a dense stand it may be cut and sprayed with 5 to 10 per cent. molasses solution to induce greater consumption. A balance by using cottonseed meal should give a very valuable ration for milk production.

(ii.) On land which does not lend itself to mowing, grass may be sprayed *in situ* with diluted molasses—using the ordiary knapsack fruit spray. The area to be sprayed may be calculated from yield cutting trials.

The implications of the above trials in cotton growing areas or newly grassed forest country during the dry winter months are obvious.

By the installation of suitable equipment to facilitate such work, progress has been accelerated and it has now been possible to co-operate with the Cotton Section in undertaking a complete examination of Rhodes grass throughout the cycle of a cotton-Rhodes grass rotation. Other such avenues of investigation with a view to using what are now by-products in a system of agriculture immediately suggest themselves. The use of cane tops or cane top silage calls for serious thought. To complete the cycle of soil fertility in the cane fields is to reduce costs and make for more efficient farming. This can only be done by employing stock as a stage in converting what is now lost by burning into valuable humus.

It is hoped to initiate this work at the Bureau of Tropical Agriculture, South Johnstone.

M. WHITE,
Animal Nutrition Research Officer.

REPORT OF THE DIRECTOR OF PLANT INDUSTRY (RESEARCH).

The Division of Plant Industry (Research) was inaugurated early in the 1937-38 departmental year, and a report of the activities within that Division since its inception is submitted herewith.

The Division as at present constituted comprises Administrative, Agricultural, Botanical, Entomological, Horticultural, Plant Pathological and Plant Physiology Sections. The Agricultural Section handles agronomy, agrostology, plant breeding, and biometrics, and the Plant Physiology Section includes not only officers working on plant physiology problems but also officers engaged on soils investigations. The duties of the personnel of the other Sections are clearly indicated by the respective titles of these Sections.

The present numerical strength of the Division is thirty-four officers engaged on investigational work, one illustrator, and two clerical assistants. A soil bacteriologist, stationed in North Queensland, is closely associated with the Division, and a number of other officers, attached to the Bureau of Tropical Agriculture at South Johnstone, are also engaged exclusively on plant industry research. The plant industry research team in this Department is therefore already numerically strong.

The launching of the new organisation necessitated careful planning, but it is pleasant to be able to record the fact that the activities of the Division are now well under way, and its work as a whole is progressing in a satisfactory manner in close association with various branches of the Department, but more particularly with the Agricultural Branch and the Fruit Branch.

The Director of Plant Industry (Research), in this annual report, deals with the Administrative Section and, in a general manner, with the activities of the other Sections of the Division, further details of which will be found in the reports submitted by the senior officers in each of these Sections. These sectional reports are attached hereto.

STAFF.

Mr. A. A. Ross, Assistant to Research Officer, who was employed in the Stanthorpe district as a general assistant to Mr. K. M. Ward, Research Officer, terminated his temporary period of service with the Department early in March and returned to the University of Queensland to complete the requirements for the degree of Bachelor of Agricultural Science. The vacancy thus created was filled by the appointment, on a similar basis, of Mr. J. L. Groom.

Messrs. J. Harold Smith, Entomologist, R. E. Soutter, Research Officer, W. A. T. Summerville, Entomologist, and H. K. Lewcock, Plant Pathologist, were all promoted to the grade of Senior Research Officer during the year under review. Mr. K. M. Ward, Assistant Research Officer, received promotion to the grade of Research Officer, and Mr. W. D. Francis, Assistant Botanist, was promoted to the grade of Botanist. Messrs. L. S. Smith and T. McKnight were also promoted to the grade of Assistant to Research Officer from the grade of Cadet.

A staff appointment to which reference must be made is that of Mr. E. C. Tommerup as Soil Bacteriologist. Mr. Tommerup obtained considerable experience both overseas and in Australia prior to joining the staff of this Department late in the year now under review. Mr. H. M. Finucan, who was recently awarded a Rhodes Scholarship, is now in England, where he will devote special attention to the study of biometrics. On his return to Queensland, Mr. Finucan will be associated with the biometrical aspect of this Division's activities.

During the departmental year Mr. W. G. Wells, Director of Cotton Culture and Senior Research Officer, visited the United States of America, being absent overseas for a period of approximately seven months. While in America, Mr. Wells investigated many aspects of primary production, and the information thus obtained will be of material assistance in designing and guiding the programme of work for the officers of this Division.

INVESTIGATIONAL PROGRAMME.

The activities of most of the officers in a Division such as the Division of Plant Industry (Research) should consist either wholly or chiefly of investigational work, and their programme should be designed accordingly. During the year 1937-38 it was therefore necessary, in connection with the inauguration of the Division, to survey the investigational requirements of plant industry, other than sugar-cane, which is, of course, the concern of the Bureau of Sugar Experiment Stations, the objective being to ultimately allocate to each officer in each Section a number of investigational projects of importance which will fully absorb his available time. Such an allocation has now been made and approved in the case of the great majority of the officers within the Division, and towards the end of the departmental year a programme of work for those officers not fully covered by projects already approved and initiated was formulated for consideration.

Contact has been maintained with the Director of Agriculture and Senior Research Officer and the Director of Fruit Culture in designing many of the investigational projects and, in such cases, the programme is based on the existence of the closest co-operation between the specialist officers of the Division and the various field officers working under the control of these two Directors. There has also been a close association between the Division and the Bureau of Tropical Agriculture, more particularly with respect to the initiation of investigational work on certain tropical fruits. When designing the programme, due consideration has been given to the activities of the Council for Scientific and Industrial Research so as to eliminate any overlapping in the programmes of the two institutions. As in the past, the relations with the Council have been of a very satisfactory nature.

The investigational programme consists of a wide range of projects, some of which will probably yield results at a comparatively early date, while, it the case of other projects, results cannot be expected for some considerable time. These long range projects, however, must be undertaken if the branches of primary production concerned are to be placed on a really satisfactory basis.

Some of the salient features of the programme are discussed in the following paragraphs, but, for a more detailed discussion thereof, the reader is referred to the sectional reports submitted by the officers in charge of the Sections.

AGRICULTURAL INVESTIGATIONS.

Wheat breeding activities have continued more or less along the lines laid down in earlier years, and can be regarded as constituting one of the most successful of this Department's investigation projects. Barley, peanut, soya bean, and cowpea have also been included in the plant breeding programme.

Tobacco experimental and investigational work, financed from funds made available by the Federal Government, was once more carried out on an extensive scale, field plots being handled at appropriate centres from Dimbulah in the north to Texas in the south. The Agricultural Section of this Division was closely associated with the design and conduct of these field experiments, and the results obtained therefrom are accordingly discussed in some detail in the report of the Division's activities. The work, however, was very largely in the hands of various officers of the Agriculture Branch and additional details regarding its progress will accordingly be found in the report of the Director of Agriculture and Senior Research Officer.

Lucerne investigations were continued during the year under review and pasture problems, both on the coast and in the far west, received attention from officers of the Division. Some time was also devoted to a survey of certain weed pest problems.

Mention may be made of the fact that during the whole of the year a biometrician was attached to the staff of the Division and was fully employed in co-operating in the design of a wide range of experiments and in the interpretation of the results obtained therefrom.

BOTANICAL INVESTIGATIONS.

The Botanical Section of the Division is on rather a different footing from the other Sections in that its work is very largely of an advisory nature. Many plant specimens are submitted by the general public and by officers of the Department for identification and for comment when necessary or desirable. This work absorbs a large proportion of the time of the staff of the Section, and has necessitated the building up of a comprehensive herbarium and botanical reference library.

The work of the Section has proceeded in a satisfactory manner along the lines laid down in earlier years.

The problem of brigalow sucker destruction was the subject of field investigation in conjunction with the Agricultural Section and poisonous or suspected poisonous plants were given considerable attention during the 1937-38 departmental year.

Although this Section is responsible for comparatively little applied investigational work, its activities constitute an indispensable adjunct to a general plant industry investigational programme.

ENTOMOLOGICAL INVESTIGATIONS.

The 1937-38 departmental year was one of definite progress in so far as the entomological investigational programme is concerned.

Very useful information relative to effective non-arsenical sprays was obtained from large scale codling moth control experiments conducted in the Stanthorpe district, and in this connection appreciative reference has to be made to the action of the Deciduous Fruit Sectional Group Committee in undertaking certain financial responsibilities with respect to the loss of fruit on the control trees. Fruit fly bait sprays were tested in laboratory experiments and some light was shed on their toxicity. Large numbers of an Indian fruit fly parasite were obtained through the courtesy of the New South Wales Department of Agriculture and liberated at appropriate centres in the State.

A menacing outbreak of the plague grasshopper occurred in the Darling Downs and Moreton Pastoral Districts, but was handled in a very satisfactory manner as a result of a large scale co-operative effort between the various parties interested in the control of the pest.

The white grub investigational programme on the Atherton Tableland has progressed in a satisfactory manner, and the supervision of this work by the White Grub Investigations Committee continues to be a happy arrangement. It is also pleasing to note that the incidence of certain serious pests of tobacco in North Queensland has declined, a decline which, to some considerable extent, is due to the adoption of control measures.

Mention may also be made of the fact that the parasite of the green vegetable bug, which was introduced five years ago from Western Australia, has become well established on the Darling Downs and its establishment elsewhere in Queensland may afford some relief from the attacks of this serious pest.

A great deal of attention was given to cotton pests, the work thereon being intensified as a result of the appointment of an Assistant Research Officer to work exclusively on the entomological problems of the crop. Much valuable information was obtained in the course of these investigations. It is appropriate at this juncture to once more express appreciation to the Queensland Cotton Board for its subsidy, which rendered financially practicable the appointment of the Assistant Research Officer at Biloela.

Satisfactory progress towards control is also indicated in the forest pest investigations. As in recent years, the Forestry Sub-Department was responsible for the salary and the whole of the expenses of the Assistant Research Officer engaged on the investigation of forest pests.

GENERAL HORTICULTURAL INVESTIGATIONS.

Last year's annual report indicated that general horticultural investigations, as conducted by the staff now associated with this Division, were little past the survey stage, although in the case of apple and pear problems experimental work had commenced at Stanthorpe. This year the position is quite different, and a large-scale programme, covering a wide range of fruits, is now under way. Some of the results obtained by the Research Officer at Stanthorpe have already enabled the Department to make further recommendations with respect to the control of little leaf of the apple.

Work on banana, citrus, papaw, mango, Australian nut, avocado, strawberry, passion fruit, granadilla, and date has been initiated, but that work is of such recent origin that results are not yet to hand.

The programme is, in large measure, a co-operative one between the specialist officers of this Division and the field officers of the Fruit Branch, who are responsible for a large proportion of the work in several of the projects.

Horticultural investigational work on several tropical and sub-tropical fruits is being conducted at the Bureau of Tropical Agriculture at South Johnstone, and this Division is closely associated with the design and conduct of that programme.

Mention must again be made of the grant obtained from the Federal Government to meet the cost of the apple and pear investigational work in the Stanthorpe district. Advice has just been received that this grant is being continued for a period of four years as from 1st July, 1938.

PLANT PATHOLOGICAL INVESTIGATIONS.

The work of the Plant Pathological Section has continued somewhat along the lines of previous years, and definite progress has been made towards the solution of a number of problems.

The investigation of the control of brown spot of the Emperor mandarin, which has been carried on in the Howard district for some years, has now been brought to a satisfactory conclusion.

The control of grape anthracnose in the Stanthorpe district has also been placed on a more satisfactory footing as the result of investigations carried out in recent years.

Tomato investigational work has again received the full-time attention of an officer of this Section, the officer in question being financed partly from funds made available by the Other Fruits Sectional Group Committee and the Rural Credits Branch of the Commonwealth Bank. Here again appreciation of the subsidies is recorded.

Good progress has been made in the forest pathology investigations, the officer in this case, as in the forest pest investigations, being financed entirely by the Forestry Sub-Department.

The disease position in papaws has claimed attention to an increasing degree, and much useful information has been accumulated which should be of value in evolving further practical measures for the control of disease incidence in this promising branch of fruit production.

PLANT PHYSIOLOGY INVESTIGATIONS.

The Plant Physiology Section is somewhat unique in that the four officers constituting that Section, together with a fifth, who is really an officer of the Horticultural Section, but who is temporarily associated with the former Section, are engaged exclusively on the investigation of the problems associated with one crop, namely, the pineapple. This arrangement is in large measure due to the receipt of substantial subsidies, which have made financially practicable the appointment of two of the officers mentioned and which have contributed largely to the maintenance of the other three. These subsidies have been received from the Pineapple Sectional Group Committee, the pineapple canners of Queensland, the Fruit Industry Sugar Concession Committee, and the Rural Credits Branch of the Commonwealth Bank, and their receipt has been much appreciated by this Department.

The progress of the work within the Plant Physiology Section has been very satisfactory, and the investigational and demonstration programme has shown clearly how pineapple production can be placed on a much better footing than has recently been the case. Quite a number of growers have already adopted the pineapple production methods now recommended by this Department, and other growers are expected to follow suit in increasing numbers.

The investigational and demonstration programme with which this Section is associated is one which has made very considerable demands on the Fruit Branch staff for co-operative efforts and the necessary co-operation has been freely given in a manner productive of mutually satisfactory results. The success of this co-operative effort indicates what may be achieved when a determined attack is made on an industry's problems by a well co-ordinated team of research and extension officers, working in happy association with the producing interests.

LIBRARY.

The usual volume of exchange publications was received in the divisional library and the file of one of the more important quarterly publications was bound. A few recently published text-books were acquired, some being for the library in Brisbane and others for the use of officers at certain of the field stations.

ACCOMMODATION.

A laboratory building at the Cotton Research Station at Biloela was completed late in the departmental year, and one section thereof has been allocated for use by the Assistant Research Officer at Biloela who is engaged on the investigation of cotton pests. A bush house has been built in the departmental grounds at Nambour for the joint use of the Horticultural Section and the Plant Physiology Section, and an improved water supply has been provided at that centre.

ILLUSTRATIONS.

As in previous years, a large number of black and white and coloured illustrations were prepared in connection with the activities, both of the Division and of other branches of the Department.

COLLECTIONS.

The departmental collections associated with this Division received adequate care during the year under review.

SHOWS AND ADDRESSES.

Exhibits were again staged at certain country shows, and officers participated in the preparation of the departmental court at the Royal National Exhibition in Brisbane. Addresses were also delivered at a number of country centres.

ADVISORY WORK.

Although the Division, as its title indicates, is primarily a research organisation, certain advisory work is undertaken by its officers. Some of this work is carried out on behalf of the general public, but, in addition, the officers frequently act in a consultative capacity to officers of other branches of the Department.

PUBLICATIONS.

Regular contributions were made to *The Queensland Agricultural Journal* as follows:—

(1) Red Spider, by Robert Veitch.
(2) Sown Pastures and their Management, by C. W. Winders.
(3) The Treatment of Tobacco Seed-Bed Covers to Prolong their Useful Life, by J. H. Simmonds and L. F. Mandelson.
(4) Codling Moth Control Experiments, 1936-37, by Hubert Jarvis.
(5) Cotton Culture, by W. G. Wells.
(6) Banana Rust Thrips Control, by N. E. H. Caldwell.
(7) A New Weed in Tropical Queensland, by W. D. Francis.
(8) Tomatoes in the Central District, by W. J. S. Sloan and W. J. Ross.
(9) Cutworms in Seedling Cotton, by W. J. S. Sloan.
(10) The Use of Acetylene to Induce Flowering in Pineapple Plants, by H. K. Lewcock.
(11) Diseases of the Papaw, by J. H. Simmonds.
(12) Insect and Allied Pests of the Papaw, by J. Harold Smith.
(13) Inconspicuous Organisms which Aid the Growth of Plants, by H. E. Young.
(14) Possible Substitutes for Lead Arsenate in the Control of Codling Moth, by Hubert Jarvis.
(15) Groundsel Bush in South-Eastern Queensland, by C. W. Winders.
(16) Yellow Spot Disease of Pineapples, by H. K. Lewcock.
(17) Little Leaf of the Apple, by R. B. Morwood.
(18) A New Weed on the Darling Downs, by W. D. Francis.
(19) The Control of the Red-Shouldered Leaf Beetle, by N. E. H. Caldwell.
(20) Renovation of Paspalum Pastures, by C. W. Winders.
(21) The Maize Trap Crop for the Control of Corn Ear Warm in Cotton, by W. J. S. Sloan.
(22) The Varieties of Guinea Grass (*Panicum maximum*) Cultivated in Queensland, by C. T. White.
(23) The Leaf-Eating Ladybird, by J. Harold Smith.
(24) The Apple Leafhopper, by K. M. Ward.
(25) Corn Ear Worm in this Season's Cotton Crop, by W. J. S. Sloan.
(26) Queensland Weeds: A Recent Introduction of the Mallow Family, by C. T. White.
(27) The Soils of the Beerburrum-Glasshouse Mountains-Beerwah Area and their Suitability for Pineapple Culture, by L. G. Vallance and H. K. Lewcock.
(28) A Soil Survey of the Beerburrum, Glasshouse Mountains, and Beerwah Pineapple Districts, by L. G. Vallance.
(29) Insecticides, by Robert Veitch.
(30) Fungicides, by J. H. Simmonds.

The last two items listed above were reprinted from Volume III. of "The Queensland Agricultural and Pastoral Handbook." This volume was published during the 1937-38 year and represents the first instalment of an ambitious publication. It consists of somewhat more than two hundred pages of actual text, illustrated by seventy-eight plates, and is a comprehensive but condensed summary of the latest available information on applied plant entomology and plant pathology.

"The Principles of Botany for Queensland Farmers," by C. T. White, which was originally published in serial form in *The Queensland Agricultural Journal*, was reprinted in book form during the year under review.

A considerable number of short articles, not listed above, were contributed to *The Weekly News Bulletin*.

ROBERT VEITCH,
Director of Plant Industry (Research).

(1) REPORT OF THE AGRICULTURAL SECTION.

The activities of the Agricultural Section of the Division of Plant Industry (Research) for the departmental year ending 30th June are reviewed in this report.

Plant Breeding Investigations.

Wheat.—The investigations in wheat breeding were handicapped in some respects by the climatic conditions experienced during the year under review. The absence of good germinating rains interfered considerably with the early sowings that were proposed, with the result that little progress was made in regard to the evolution of suitable slow-maturing varieties. Difficulties were also experienced in the later sowings, the adverse conditions encountered suppressing minor variations in morphological characters to a levelling extent. Conditions were very suitable in the rust resistance tests, however, Dundee and many other well-known varieties failing to produce grain, whereas several types, consisting chiefly of local cross-bred strains, produced, in many instances, nice plump grain.

Considerable success was obtained in the plot at Toowoomba used for summer sowings of breeding material. It appears possible to obtain an additional generation in a year in the breeding operations by this procedure, and Mr. R. E. Soutter, Senior Research Officer, is hopeful of greatly speeding up the early phases of the development and the testing of hybrid strains.

Flora, a variety bred by Mr. Soutter, won the Commonwealth Champion Prize in the medium strong wheat class at the 1938 Sydney Royal Agricultural Show. It is one of the parents of Puora wheat, which won in the same class at Sydney last year. Flora appears to be a very promising wheat, and is appreciated by the growers, as it led in the acreage sown this season in Queensland, which is the first time a locally-bred wheat has held this position.

Barley.—Work was continued in the attempt to evolve rust-resistant types of barley. Additional varieties of reputed ability to resist rust were imported for testing with local strains of cross-breds. Investigations have not progressed for a sufficient period, however, to allow of conclusions being drawn as to the possibility of evolving superior barleys for this State.

Peanut.—Satisfactory progress is being made in developing superior strains of the selections of the Virginia Bunch peanut originally made by Dr. L. G. Miles. Mr. Soutter reports that a considerable proportion of the seed of this variety supplied for sowing by the Peanut Board is the progeny of the improved strains. Through the courtesy of the Director of Plant Breeding in the Department of Agriculture of New South Wales, thirty-eight new varieties were available for growing in quarantine plots. Several yielded very promising results, and will be carefully studied in the coming season.

Soya Bean.—The testing of introduced varieties of soya bean, preliminary to evolving suitable types for Queensland, has been continued. Unfortunately, adverse climatic conditions at harvest time greatly affected the experiments, so that no valid conclusions could be drawn. Ototan gave very promising results as a fodder and green manuring type, and is worthy of extensive trial. The yields that have been obtained from tests of soya bean over a series of seasons have not shown, as a whole, this crop to be of much promise in the southern part of the State. A comprehensive series of a wider range of types has, however, been arranged for testing in the 1938-39 season, in the hope of obtaining material for use in developing suitable strains.

Cowpea.—The testing of named varieties of cowpea and some of the cross-bred types evolved by Mr. Soutter has been continued with very promising results. It would appear that nematode-resistant strains developed out of the cross-bred material, capable of withstanding very dry conditions, may soon be available for general testing. The evolution of such a type will provide the farmers on light sandy soils with a crop that should play a most important part in their rotations.

Tobacco Investigations.

A comprehensive programme of experiments and simple demonstrations was carried out in the 1936-37 season by the field staff of the Agricultural Branch in association with Mr. L. F. Mandelson, Research Officer. Owing to the fact that the leaf has to be cured and stored for some time before selling, it is not possible to finalise the experiments in the season in which they are conducted, hence there will always be a lag in reporting on tobacco investigations.

Adverse climatic conditions and other factors prevented an appreciable number of the projects being completed. The results obtained from some of the more important experiments, however, have definitely contributed to progress in the development of the tobacco-growing industry and are touched upon in this report.

The trouble resulting in the uneven and unsatisfactory development of seedlings in the seed-bed, known locally as "yellow patch," reported upon by Mr. Mandelson for the 1935-36 season, was investigated in the field and at Brisbane. An experiment at Dimbulah indicated that the trouble was not due to methods employed in sterilising the seed-bed soil, and no evidence was obtained to implicate a plant pathogen as being responsible for yellow patch. Subsequent investigations in Brisbane indicated that large quantities of organic and inorganic nitrogen were detrimental to seedling growth, and that relatively heavy applications of a combination of blood and nitrate of soda gave less satisfactory results than nitrate of soda alone used as the source of nitrogen. Further experiments are being conducted in the field in an endeavour to confirm these findings.

Experiments at Woodstock and Mackay demonstrated the validity of previous results in which control of blue mould had been obtained through the use of benzol in the seed-beds.

The problem of ascertaining the most suitable rotations in which to grow tobacco has been under further investigation in several districts with varying degrees of success. In an experiment at Mareeba, in which tobacco followed winter cereals and a fallow, the most profitable result was obtained following the fallow, in conjunction with an application of 700 lb. per acre of a 4-12-6 fertilizer mixture. In a trial at Dimbulah in which tobacco followed fallow, Japanese millet, cowpea, *Crotalaria juncea* and tobacco, both a better yield of tobacco and a greater monetary return were obtained when tobacco followed a rather weedy fallow and Japanese millet. No significant differences were obtained in experiments at Bowen, but the total yield when tobacco was grown following tobacco was the lowest of any treatment included in the experiment, as was also the case at Mackay. The results as a whole indicate that an improvement in yield may be anticipated through growing tobacco in rotations, and further experiments are being conducted in an endeavour to ascertain the most profitable cropping system to use.

A series of simple trials ranging over several of the tobacco growing districts, in which the addition of 100 lb. per acre of superphosphate to 500 lb. of a 4–10–6 mixture was tested, rather indicated the extra amount of phosphoric acid to be beneficial. These conclusions were supported in some cases by the results obtained in another series of trials in which various types of fertilizers were tested. The 4–10–6 mixture appeared to be as good as any other mixture tried and 700 lb. per acre was preferable to a 500 lb. application. These latter results were in turn validated by the generalisation drawn from the returns obtained from a series of experiments in which the yields and values tended to increase progressively as the amounts of nitrogen and potash were increased. The best results were realised at the highest rate of application, i.e., 40 lb. of nitrogen and 70 lb. of potash, where the phosphoric acid content varied from 50 to 90 lb. per acre. The accuracy of grading of the leaf of the experiments may possibly affect the results somewhat, but the general trend of the experiments indicates that rather heavier applications of fertilizers than are normally used may be beneficial. More complex experiments have been arranged for the coming season to provide further data on this important aspect of tobacco growing.

Preliminary cultivation trials were conducted in which the merits of the methods of fertilizer placement and cultivation of crop used generally in Queensland were compared with those used in the southern tobacco-growing States of the United States of America. The results indicated consistently that the American methods produced heavier yields of leaf, but in two of the three trials the combination of the Queensland method of shallow cultivation and the American method of mixing the fertilizer thoroughly with the soil, rather than leaving it undisturbed at the bottom of the furrow and then bedding over it, as is the Queensland practice, produced the best value per acre. More investigations of this aspect of tobacco growing are required, however, before definite conclusions can be drawn.

A small scale investigation of the merits of several varieties was conducted during the season, but no outstanding results were obtained. At Dimbulah the returns realised rather indicated that the Gold Dollar variety was superior to the rest of the varieties tried, which included all the standard types. This variety has increased in popularity to a marked extent in nearly all districts in recent seasons and seed sales indicate it to be one of the leading types grown.

Lucerne Fertilizer Trials.

Three fertilizer trials in lucerne were started during the season on alluvial soils in the Harrisville and Toogoolawah districts, through the financial assistance of the Pasture Improvement Committee. The extremely dry conditions at mid-season seriously reduced yields so that the results obtained may not be thoroughly indicative of the merits of the treatments tested. It would appear that some slight gain may be obtained by applying some of the fertilizers tried, but it will be necessary to conduct the trials for several seasons before valid conclusions can be drawn.

Establishing Grazing Lucerne.

In recent years the farmers of the Western Downs and Maranoa districts have increased the use of lucerne for grazing purposes in rotation with wheat. To ascertain the practicability of establishing lucerne with a wheat crop in order to eliminate the cost of maintaining a clean fallow between the harvesting of the wheat and the autumn sowing of the lucerne, an experiment was conducted near Warra, in which lucerne was sown with 10, 20, and 30 lb. of Florence wheat per acre. Very satisfactory results were obtained, but as the seasonal conditions subsequent to the harvesting of the grain were exceptionally good, the practice requires testing over a series of seasons before its true merit can be determined.

Pasture and Weed Surveys.

Mr. C. W. Winders, Assistant Research Officer, carried out several surveys during the season dealing with the rehabilitation of pasture areas in the East Gympie, Dallarnil, Samford, and Dayboro' districts. Suitable recommendations for the renovation of paspalum and Rhodes grass pastures on areas suitable for cultivation were made except in the case of the last two areas, where the invasion of paspalum pastures by blue couch grass (*Digitaria didactyla*) constitutes a problem of considerable importance that requires careful investigation. A survey was also made of the groundsel bush (*Baccharis halimifolia*) position in the North Coast districts. The investigations revealed this plant to be a weed of some consequence requiring the development of methods of economical eradication. The Weeds Section of the Commonwealth Council for Scientific and Industrial Research is now giving consideration to the possibility of effecting biological control of this weed.

Trial and Propagation Gardens.

No further extension of the grass trial plots at St. Lucia was made during the season, owing to the building operations of the University requiring the site at an early date. An African grass, *Brachiaria decumbens,* has done particularly well over a four-year trial on an infertile sandy clay soil at this location, and warrants extensive careful testing under coastal conditions.

The demonstration garden at the Brisbane Show Grounds has again been maintained, and has been inspected by many hundreds of farmers and graziers.

BIOMETRICS.

The development of the modern theories and practices of biometrical experimentation has been of assistance to all phases of agricultural investigation. It is now possible to combine several factors in the one experiment to show the interaction between different variables, such as the effect of time of planting and spacing of rows and plants on the varieties of a crop under investigation. Obviously such types of investigation are of greater value than where each factor is studied singly in an experiment, for not only is more information obtained, but a reduction is accomplished in the number of experiments required to supply all of the data that could be secured by less modern methods.

A thorough knowledge of the subject is required, however, to allow of experiments being designed properly, especially the more complicated ones, and this fact is being recognised in all countries with organisations conducting agricultural investigations, by the employment of officers specialising solely in biometrics. The appointment of Miss Barbara Shield, Assistant to Research Officer, to assist in the designing and analysing of experiments has been of great help to the officers engaged in investigations requiring experimentation. The design of many of the experiments conducted during the season under review has been arrived at after discussion with Miss Shield, and the data being obtained indicate the value of such assistance. Some fifty-two experiments have been biometrically analysed this season, as well as extensive data to ascertain suitable methods of sampling plant and tree populations for use in various investigations.

ACKNOWLEDGMENTS.

During the first seven months of the season the writer was abroad on official business, so that the work reported upon was instituted under the direction of either the present Director of Plant Industry (Research) or the Director of Agriculture and Senior Research Officer. The opportunity is taken to express appreciation to both of them for the added duties they accepted, and also to the members of the staff who assisted in the carrying out of the work reported upon.

W. G. WELLS.
Director of Cotton Culture and Senior Research Officer (Agricultural Section).

(2) REPORT OF THE BOTANICAL SECTION.

General correspondence and personal interviews with farmers, pastoralists, and others occupied most of the time of the office. The work of this Section is mainly advisory, and the inquiries submitted extended over a wide range of subjects relative to plant life. By means of publicity through the press, and lectures, where nearly always the availability of the Section for reports on any specimens submitted is stressed, this service is now being availed of more widely by farmers and pastoralists. Every year a very large number of specimens is submitted. Numerous specimens were again received from the Department of Public Instruction, particularly from scholar secretaries of school forestry, grass and forage project clubs, and bush-house clubs, and from teachers desirous of having reports on specimens suitable for nature study classes. As in previous years, where the replies to inquiries submitted were deemed to be of more than individual interest, they have been utilised by the editor of the departmental publications for the pages of *The Queensland Agricultural Journal*. This is now regarded as a feature of the *Journal*, and extracts have been quoted freely in other journals, both in Australia and abroad.

FIELD WORK.

The most extensive collecting trip undertaken during the year was one overland to the Daintree River and Thornton Peak. A very large number of specimens was obtained, some from the more northern regions being previously undescribed. and some others not previously represented in the collections, or by only a few fragments. Some of these, along with specimens from other collections, will be described and submitted as a further instalment of "Contributions to the Queensland Flora." A special vacation week was spent in Barrington Tops, New South Wales, for the purpose of comparing the southern limit of the Nothofagus-Moorei forests with those in Queensland. A set of specimens collected will be incorporated in the Queensland Herbarium when the material has been determined. A journey overland from Mackay to Brisbane in October gave the opportunity of much collecting en route in localities not previously botanised over by any member of the staff. Excursions of the Queensland Field Naturalists' Club and National Parks Association have afforded the opportunity to members of the staff to do some interesting botanising in South-Eastern Queensland.

BRIGALOW DESTRUCTION.

In the early part of February the Tara district was visited in company with Mr. R. E. Soutter, Senior Research Officer, to study methods practised by graziers in the district for brigalow destruction. It is claimed in the district that sheep are an effective means of keeping down brigalow suckers. At the same time, observations were made as to the best means in general of dealing with brigalow, and with suckers. It was found it was the practice to frill brigalow at any time of the year, though the general opinion seems to be that frilling during the autumn months, March to the end of June, gives the best results. Shallow frilling seemed to give better results than deep frilling—at least, that was the opinion of most graziers. The general opinion, both in the Tara district and elsewhere in Queensland, is that brigalow should not be fired before three or four years after ringing, and the longer the rung brigalow is left the cleaner is the subsequent burn, and consequently the smaller is the growth of suckers. In regard to sheep checking and eradicating brigalow suckers, there was evidence that one sheep per acre gave the best result. If the sheep were removed from the area for a longer period than a month, the growth got beyond them, and they practically refused to eat it. Sheep will die of starvation if confined to a diet consisting solely of brigalow suckers, but in most cases, in the cleared brigalow country, there is a growth of grasses and herbage which offsets to some extent the indigestible nature of the brigalow suckers. A visit was also made by the writer to "Bybera," the property of Dr. E. and Mr. R. Hirschfeld, near Inglewood. These gentlemen have made a rather extensive study of brigalow, and the results of their experiences have been embodied in a paper in *The Queensland Agricultural Journal* (June, 1938). Dr. Hirschfeld and his son pin their faith on poisoning the standing brigalow in the first place. This they regard as adding 2s. to 3s. 6d. per acre to the cost of ringing, but the subsequent lack of suckers is said to overcome this disadvantage. Dr. Hirschfeld and his son are still carrying out work on the eradication of brigalow suckers.

CONSERVATION AND PROPAGATION OF EDIBLE TREES AND SHRUBS.

Acting on Ministerial instructions, a scheme for the conservation and propagation of edible trees and shrubs in Western Queensland was drawn up and submitted for consideration. Recommendations for the conservation and propagation of Mulga, Currajong, Saltbush, and some exotic trees were made. It was further recommended that Mr. S. L. Everist, Assistant to Research Officer, Blackall, make a study of western trees and their fodder values.

LECTURES.

The following lectures were delivered in the course of the year:—

18th July.—A Talk on Poisonous Weeds (Broadcast).

11th Aug.—Three lectures on Grasses, Weeds, and School Collections (Teachers' School at Gatton).

7th Nov.—Some Tropical Grasses (Broadcast).

13th May.—Economic Uses of Orchids (Queensland Orchid Society).

20th June.—Flora of West and North Queensland (Queensland Field Naturalists' Club).

23rd June.—Plants Poisonous or Harmful to Live-Stock (Pig and Dairy School, Gatton).

POISONOUS PLANTS.

A large number of specimens of plants suspected of being poisonous to stock was received during the year from pastoralists and dairy farmers in different parts of the State. Much useful information accompanied these specimens, and an article dealing with them and other poisonous plants will be submitted, at an early date, for publication in *The Queensland Agricultural Journal.*

HERBARIUM.

The rearrangement of the fern herbarium referred to in the last two annual reports is now complete. An index is being compiled for it, and this will simplify identifications of these plants considerably.

There is a keen demand for Queensland specimens on an exchange basis. Exchanges have been continued with the Royal Botanic Gardens, Kew (England), New York Botanic Gardens, and the Arnold Arboretum, Boston, U.S.A.

The Section is indebted to the Director of the Royal Botanic Gardens, Kew, for the critical examination and determination of many specimens submitted, particularly of introduced weeds, of which it is necessary to have the correct botanical identity. Duplicates of a large number of specimens collected by Mr. C. E. Hubbard, while he was in Australia, have been received from Kew during the year, also a number of specimens of non-Australian grasses.

As in previous years, a considerable number of specimens during the year has been sent to the National Herbarium, Melbourne, and thanks are due to the Government Botanist and Director, Mr. F. J. Rae, for comparing specimens with types and for the loan of type material.

A number of specimens, particularly of Eucalyptus and Acacia, have been reported on by the courtesy of the Curator and Chief Botanist of the National Herbarium, Sydney (Mr. R. H. Anderson).

During the year extra assistance was granted for herbarium work. This enabled some mounting to be done, and specimens to be filed away. There is still a lot of both Australian and exotic material to be placed away. The herbarium is being made more useful by filing away photographs, drawings, letters, newspaper cuttings, &c., and is becoming a storehouse of knowledge on Queensland plants, their distribution, economic properties, &c. Some of this information is unsuited for filing on cards.

Mr. S. L. Everist, Assistant to Research Officer, Agricultural Section, spent a week at the Herbarium completing his series of articles on the Chloris grasses of Queensland. The final part (Part IV.) appeared in *The Queensland Agricultural Journal* for May, 1938.

BOTANIC MUSEUM.

Additions to the Botanic Museum have not been very numerous. Specimens of dried fruits, barks, and woods have been added from time to time. Some enlargements of Queensland vegetation have been added to replace older pictures.

PUBLICATIONS.

A number of articles were contributed to *The Queensland Agricultural Journal*, and these are listed in the report of the Director of Plant Industry (Research). The following papers were published in *The Queensland Naturalist*:—

(1) Australian Ferns of the Genus Cyclophorus, by D. A. Goy.
(2) Shield Ferns—the Genus *Polystichum* in Australia, by D. A. Goy.
(3) A New Fern for Queensland, by D. A. Goy.
(4) Eucalyts or Gum Trees of the Brisbane District, No. 23, by C. T. White.

C. T. WHITE,
Government Botanist (Botanical Section).

(3) REPORT OF THE ENTOMOLOGICAL SECTION.

A very full programme of work has been carried out during 1937-38 at the several field stations and at Head Office, and the following discussion of various pests will indicate both the scope of the investigations and the progress made therein :—

CODLING MOTH.

The various codling moth, *Cydia pomonella* L., sprays referred to in last year's report have been submitted to further critical tests by Messrs. K. M. Ward, Research Officer, A. A. Ross, Assistant to Research Officer, and J. L. Groom, Assistant to Research Officer, in experiments as Stanthorpe. Two sprays, white oil-nicotine sulphate and white oil alone, gave results in conformity with expectations based on previous work. Potash soft soap and colloidal sulphur-nicotine sulphate failed to give commercial control. A new spray, nicotine sulphate with sufficient white oil to act as a spreader, compared favourably with the best of several schedules. The analysis of the data shows, however, that all of the alternative sprays are less effective in preventing calyx entrances than lead arsenate. When the total control given by arsenical and non-arsenical schedules was more or less similar, it is inferred that the substitute spray is more efficient as a cover spray than lead arsenate. There is therefore justification now for growers adopting schedules in which lead arsenate calyx sprays initiate treatment and are then superceded by white oil-nicotine sulphate or white oil alone. Both these sprays are more expensive than lead arsenate, the white oil-nicotine sulphate much more so, and the economics of control will, during the coming season, favour schedules in which lead arsenate calyx sprays are followed by white oil applications.

The insecticidal properties of nicotine sulphate with a white oil spreader require further investigation. Current work indicates that this spray is more effective than white oil alone, and equal to nicotine sulphate with the full quota of white oil. Should this be confirmed, a more efficient spray than white oil for cover spray applications may then be available at a reasonable cost.

FRUIT FLY.

Some attention is being given to the possible utility of bait sprays in controlling the Queensland fruit fly, *Chaetodacus tryoni,* Frogg. Laboratory work at Stanthorpe has shown that sweetened solutions containing various poisons such as barium fluosilicate and lead arsenate are toxic and show sufficient promise to warrant field tests. Unfortunately, a satisfactory field technique for experimental requirements is extremely difficult to devise in this case and less exacting designs, together with experience over a period of years, must be the basis of any such project.

Fruit fly puparia parasitised by *Syntomosphyrum indicum* Silv., an Indian insect, have been received from the New South Wales Department of Agriculture at intervals during the year, the emerging insects being subsequently liberated in the more important fruit-growing districts of the State. Sufficient have now been released to ensure establishment if establishment is at all possible, and it is hoped that this insect will assist in the control of fruit fly.

GRASSHOPPERS.

As anticipated in last year's report, the plague grasshopper, *Chortoicetes terminifera* Walk. proved troublesome in the spring. Hopper emergence on an unprecedented scale occurred in some of the more productive parts of the Darling Downs and Moreton Pastoral Districts, being most intense in the vicinity of Oakey, Dalby, Esk, and Kilcoy. A spring outbreak coincides with the development of the Darling Downs wheat crop and an early recognition of the threat to this and the associated crops stimulated a control campaign which, as an example of departmental-farmer co-operation, has seldom been equalled. Voluntary grasshopper control committees were formed in various districts, baiting materials were purchased, and after mixing at selected field depots, applied when and where necessary. Mr. J. A. Weddell, Research Officer, with the assistance of Mr. Hubert Jarvis, Research Officer, and local Inspectors of Stock and Dairy Inspectors, handled the advisory and organising activities of the Department throughout.

The voluntary grasshopper committees were eventually superseded by the Shire Councils, who assumed full responsibility for grasshopper control work within their boundaries. Efficient work was ensured not only by a general appreciation of the importance of the pest but also by financial assistance from the Crown. As a result, the losses were negligible, wheat and fodder crops were saved, and the compulsory baiting policy amply vindicated as the most economical and efficient method of controlling the pest.

The bait formula is ½ lb. arsenic pentoxide, 4 lb. molasses, 2½ gallon water, and 24 lb. bran and differs somewhat from that in general use elsewhere. The use of arsenic pentoxide is justified by the fact that supplies are generally available in Queensland at slightly less than cost price through the aegis of the Department of Public Lands.

The spring hoppers, which escaped poisoning and reached maturity, first encountered dry weather and later heavy rains. No migratory flights were observed, and apparently the baiting campaign conducted against the first generation, combined with later adverse climatic conditions, was responsible for a great reduction in the volume of control work necessary for dealing with the second generation. Seasonal operations in the previously infested areas then reverted to normal, and little baiting was necessary later in the season.

In autumn, adults of a larger species, *Austacris guttulosa* Walk. were very abundant in inland districts in common with a variety of other grasshoppers. Losses were not extensive, though the pests were occasionally troublesome in orchards and market gardening areas thereabouts.

WHITE GRUBS IN PASTURES.

The white grub investigations carried out by Mr. D. O. Atherton, Assistant Research Officer, under the supervision of the White Grub Investitions Committee, show considerable promise. Pasture destruction during the current year has not been excessive owing to comparatively few third-stage grubs being present in the soil. This in no way interfered with the experiments, because improvements in farming practices will be of economic importance in themselves as well as being a safeguard against white grub losses in the future.

Earlier work pointing to nutritional deficiencies as an explanation of poor fodder crops in the wetter parts of the Atherton Tableland was confirmed during the year, excellent crops of maize and maize with legumes having been grown for ensilage purposes with the aid of various fertilizers. The way is now clear for establishing quantitative trials to determine the economic optima at which inorganic and organic manures may be applied.

Further work on maize grown in conjunction with legumes for ensilage has indicated a difficulty in producing coincident maturity. The rate at which the several varieties and subtypes of maize grown on the Tableland mature varies considerably. Both constituents in a field mixture of maize and rice bean were at the right stage of maturity for cutting as ensilage in 1936-37. Another type of maize matured much earlier than rice bean in a similar mixture during 1937-38, though the maize synchronised with Groit cowpeas excellently. To ensure joint ripening, maturity characteristics of both constituent plants must therefore be known and trueness to type is necessary.

The bacterial disease of 1937, though the cause of considerable mortality in white grubs, did not prevent a heavy flight of beetles in the spring. Apparently the mortality was greatest in the more densely grub-populated soils, but sufficient survived to ensure a flight, particularly as early spring rains favoured beetle emergence. A fodder shortage is therefore probable in 1939 unless rains are abnormally good. This fact has been impressed on farmers by the personnel of the White Grub Investigations Committee, and already active steps are being taken to build up reserves to meet the fodder requirements of the stock during that period.

A new phenomenon has to be recorded. The greyback beetle, *Lepidiota albohirtum* Waterh., notorious as a pest of sugar-cane on the coast, caused extensive damage to maize in the drier part of the Atherton Tableland maize belt. The pest must have been present in the area for some time. The current losses are doubtless due to the very early planting last season following good spring rains, the maize having been sufficiently far advanced at the time of beetle flight to attract ovipositing females. The onset of root destruction was too late to prevent normal cob development, but the subsequent collapse of the plant necessitated early harvesting to obviate mould development. Harvesting costs were increased particularly where adequate facilitates were not available for subsequent drying on the farm.

APPLE LEAF HOPPER.

The apple leaf hopper, *Typhlocyba froggatti* Baker, long known as a fruit pest in New South Wales, penetrated into the Stanthorpe district during the year. So far, its range is by no means extensive, but it seems inevitable that the pest control programme must be altered to ensure the control of this insect. Fortunately, adequate control is practicable by means of nicotine sprays used either alone or in conjunction with codling moth treatments. Hence, though some additional expense in spray materials may be involved, the pest should cause no dislocation in the working operations of a well-managed orchard.

STEM BORER IN TOBACCO.

The tobacco stem borer, *Phthorimaea heliopa* Low, has been singularly innocuous during the past two seasons in sharp contrast to the earlier position in the more important producing areas. Freedom from attack can not be attributed solely to tolerably good seasons, for these, while they may assist the plant to grow away from the pest, should in no way diminish the insect population. Perhaps the main contributing factors are the early removal of spent stems, the desirability of which is now better appreciated by the farmer, and seed-bed protection when the moths are on the wing. Where irrigation facilities are available, the "close" season for tobacco is much shorter than in areas where field operations are conditioned by rainfall. It is, perhaps, significant that both the stem borer and its near relative, the leaf miner, *P. operculella* Zell, are particularly troublesome in irrigated areas. Consideration might more frequently be given to the incidental pest problem raised by deviations from established practices in areas where irrigation facilities are available.

GREEN VEGETABLE BUG.

The green vegetable bug, *Nezara viridula* L., is now well established in all fruit and market gardening areas of the State. In 1937-38, losses have been severe in the central and northern districts, the tomato crop at Bowen having suffered particularly. Insecticidal control of this pest is very difficult, and arrangements were therefore made in 1933 to colonise the egg parasite, *Microphanurus megacephala* Ash, originally imported from Egypt to Western Australia by Mr. L. J. Newman, the Entomologist of the Department of Agriculture in that State. Several consignments courteously supplied by the Western Australian Department were liberated in Southern Queensland in that year, and Mr. Jarvis has recently reported that this beneficial insect is now well established on the Darling Downs. Egg parasitism is apparently very high, and it may be significant that the importance of the pest has been on the wane in areas where the parasites were released, while elsewhere it is numerically on the increase. A recent survey indicates that a wider distribution of the parasite through the State may be worth while and arrangements are being made accordingly.

YELLOW PEACH MOTH.

The yellow peach moth, *Dichocrocis punctiferalis* Gn., has been very active during the year, particularly in autumn maturing fruits. Plant mortality in papaw groves may be due to a variety of causes and the yellow peach moth is not uncommonly a contributing influence, larvæ infesting the inner tissues of the growing point. Citrus has also suffered.

COTTON PESTS.

Early spring rains in the various cotton districts permitted planting in October and November in most of the cotton-growing districts other than those to the north of the cotton belt proper, where the rains tapered out. As a result the spring generation of corn ear worm, *Heliothis obsoleta* F., was fairly numerous, though in only a few instances did migrating swarms necessitate swabbing methods of control. In February extremely dry weather severely checked the crop and also most of its associated pests. As a result, any insect damage was far outweighed by the direct consequences of dry weather.

The research work carried out by Messrs. W. J. S. Sloan, Assistant Research Officer, and D. J. Lee, Assistant Research Officer, included further tests of various dusts and swabbing solutions for the field treatment of corn ear worm. The diminished yields on all crops due to dry weather outbalanced the effect of control measures, and their economic utility is therefore still in doubt. It is conceivable that when crops give average or more than average yields, direct control measures may be amply repaid, but the fluctuation in yield attributable to other causes is apt to upset the best of calculations. Probably on new land which is relatively safe from a cropping point of view, treatment may be worth while, but on old land where a climatic check stimulates vegetative as distinct from fruiting growth, it is improbable that direct control recommendations will be practicable.

Maize trap crop trials, in which swabbing mixtures were applied to the plants, have been continued on an extended scale during the year, but results as expressed in cotton yields were inconclusive. In a reasonably good season, a swabbed trap crop may be very effective as a control for corn ear worm. In adverse years, serious disabilities arise which may reduce its value, though the swabbing doubtless obviates any trap crop accentuation of corn ear worm infestion in the cotton.

Jassids are becoming annually a more important pest of cotton. Control measures are being investigated, and some reputedly resistant varieties—e.g., U4—have been under observation. Though these varieties show some resistance to the pest, the lint quality is such that careful selection will be necessary before they and the progeny of any crosses with established types can be considered suitable to Queensland requirements.

Other pests of cotton have not been troublesome, though the cotton leaf perforator, *Bucculatrix gossypii* Turn., was widely distributed in the field at mid-season. The rough boll worm, *Earias huegeli* Rosenk., caused a fair amount of terminal injury to early crops.

LANTANA LEAF BUG.

Acting on behalf of the Council for Scientific and Industrial Research, colonies of the lantana leaf bug, *Teleonemia lantanae* Dist., were released near Rockhampton by Mr. Sloan. The insect has now been established, but though tip burn, due to feeding, is not uncommon, the host plants have not received any material setback. It is much too early as yet to indicate the possible utility of this insect in the control of its noxious host.

BEAN FLY.

French beans, an important crop in Southern Queensland, are particularly susceptible to bean fly, *Agromyza phaseoli* Coq., attacks. In coastal districts, this insect not only restricts production to the cooler months when the pest is inactive, but also plays havoc in mild winters particularly if growth is slowed up by dry weather. No adequate control measures have hitherto been available. Recently, following published data concerning the value of nicotine sulphate-white oil as an insecticide for the control of bean fly, trials were established at Cooroy by Mr. N. E. H. Caldwell, Assistant Research Officer, which have since shown that the spray can be very useful in Queensland. Treatment is given at four-day intervals from the time of germination. At least two and sometimes three spray applications may be necessary to protect the plant at its most vulnerable phase, but treatment is both effective and economically worth while.

BANANA APHID.

Existing regulations prescribe the use of kerosene for the destruction of the banana aphid, *Pentalonia nigronervosa* Coq., on bunchy top infected plants. Current practices are being investigated and compared with other methods for dealing with this insect.

STRAWBERRY PESTS.

With the successful termination of the banana rust thrips control work, Mr. Caldwell is now carrying out exploratory work on the pests of the strawberry crop with a view to designing detailed investigations.

TOMATO MITE.

Measures for the control of the tomato mite, *Phyllocoptes lycopersici* Mass., are very necessary where tomatoes are grown in the central and dry northern districts. The utility of sulphur and the incorporation of equivalent products in the tomato pest control programme are, therefore, under examination.

FOREST PESTS.

Considerable progress has been made with the hoop pine weevil, *Aesiotes notabilis* Pasc., investigation initiated last year by Mr. A. R. Brimblecombe, Assistant Research Officer. Laboratory studies, in conjunction with plantation observations, have shown that though the adults may live and reproduce for a period of twelve or more months, egg laying is favoured chiefly by moist weather conditions. There are thus definite periods of the year in which pruning operations can be undertaken with reasonable safety, and the available data should simplify an assessment of the risk factor. The period of wound susceptibility to attack correlated with weather conditions at the time are adequate to guide plantation management so that losses can be reduced to a minimum.

Chermes, *Adelges pini* Born, has been a cause of some concern during recent years in plantations of exotic pines. Indigenous predators, though numerous, are insufficiently effective to keep the pest in check. An additional loccinellid predator, supplied by the Council for Scientific and Industrial Research, has been released during the year and is now well established.

In come localities, the control of various pests—e.g., pink wax scale (*Ceroplastes rubens* Mask.)—on young pines requires the use of insecticides. The suitability of various sprays, elaborated for use on fruit trees, for application to pines has been determined during the year. Many of the better known sprays were injurious, causing tip dieback, chlorosis and needle shedding, but two utility scalicides, soap-washing soda and kerosene emulsion, can safely be used in moderation during the summer months.

The records of insects of forestry interest have been considerably increased during the year.

The importance of the starch content in the wood in relation to infestation by *Lyctus brunneus* Steph., was elucidated in England some years ago. The possibility of depleting the starch content of some particularly susceptible timbers—e.g., spotted gum—by means of ringbarking some months prior to felling is under investigation and may lead to harvesting practices which will ensure freedom from attack when the logs are milled.

RECORDS OF INTEREST.

Army worms, *Spodoptera exempta* Walk.—Though pasture losses from the larvæ were not extensive, adult moths were exceedingly abundant in the Brisbane and near Brisbane district during February and March of 1938.

Red spider, *Tetranychus telarius* L.—Severely infested papaws in the Brisbane district during autumn, often associated with large populations of a Coccinellid predator, *Scymnus* sp.

Lesser cotton stainer, *Oxycarenus luctuosus* Walk.—Numerous reports of injury to fruit trees in inland districts have been received. The economic status of the insect is doubtful as the bugs may aggregate in various places without comparable injury.

Grape thrips, *Haplothrips froggattii* Hood.—Outbreaks in vineyards at Roma and Gayndah were associated with faulty setting and bunch abnormalities.

White wax scale, *Ceroplastes destructor* Newst.—The heavy infestation in citrus areas during recent years appears to be receding somewhat.

The fruit spotting bug, *Amblypelta lutescens* Dist.—Originally a pest of bananas in the Rockhampton district, this insect has recently been troublesome on papaws both there and further north where the crop is grown commercially. Even a small bug population may give a considerable setback to infested plants.

INSECT COLLECTION AND APIARY WORK.

As in the past, Mr. H. Hacker, Assistant Research Officer, has combined the care of the entomological collection with any necessary apiary work. As cabinets become available, the valuable collection is being transferred to these from store boxes and thus made accessible for ready reference by other members of the staff.

ILLUSTRATION WORK.

Illustrations have been prepared by Mr. I. W. Helmsing, Illustrator, as required for publication purposes. A number of life history exhibition cases have also been added to the museum during the year. Mr. Helmsing's work has prompted many requests for special assistance to other sections of the Department and these have been acceded to as far as practicable.

J. HAROLD SMITH,
Senior Research Officer (Entomological Section).

(4) REPORT OF THE HORTICULTURAL SECTION.

The survey of horticultural research requirements which was carried out last departmental year, and recorded in that year's annual report, disclosed the fact that there were a large number of important points requiring urgent and thorough investigation. Under these circumstances, and as there are at present but two officers of the Division of Plant Industry (Research) and one of the Bureau of Tropical Agriculture whose full time can be allotted to horticultural research, other than that associated with pineapples, it has been both necessary and desirable to seek the co-operation of the Director of Fruit Culture in carrying out the programme of investigational work. Mr. Barnes has given this in the form of part-time assistance of several members of the Fruit Branch staff and with this very material help it has been found possible to commence research in connection with twelve of Queensland's most important fruits in addition, of course, to the work carried out on pineapples by the staff associated with Mr. H. K. Lewcock, and discussed elsewhere by him in the report of the Plant Physiology Section. The great majority of the problems which have been attacked are fundamental in nature and require long term research before much that is concrete will appear. As most of the work was commenced less than twelve months ago it is therefore not to be expected that this report will contain much in the way of results.

The chief matters given attention during the period under review are dealt with in the following paragraphs.

Deciduous Fruits.

Mr. K. M. Ward, Research Officer, has continued to handle the research work in the Stanthorpe district under the same conditions as were recorded last year and for the most part has followed on the work commenced in that period, though in some instances the work has been expanded or modified. The avenues of research he is handling, as detailed below, all aim at obtaining basic information. In carrying out his programme Mr. Ward was assisted during the first portion of the departmental year by Mr. A. A. Ross, Assistant to Research Officer, and during the latter portion of the year by Mr. J. L. Groom, Assistant to Research Officer.

Work on deficiencies of major elements has again been pursued. The pot culture work, commenced towards the end of last year, has been continued. Some difficulty has been encountered in obtaining satisfactory growth on young potted trees deprived of a major element early in life, and slight alterations in technique have accordingly been found advisable. The position is now quite satisfactory and this work will, without doubt, furnish a valuable guide for field studies.

The fertilizer experiments on both bearing and non-bearing trees have been continued. From the results indicated during the first year it seems doubtful whether the trees actually received the nutrient value of the food supplied in time to be of material benefit to last year's crop. It is considered that the lack of rain at the appropriate period probably prevented the food materials becoming available in quantity. Studies of weather data over the past fifty years have not helped towards a solution of the time of application difficulty which thus arises. It is now proposed to apply the fertilizer at a much earlier date than that usually accepted in the area as correct. Unless phenomenal winter rains or extreme drought occurs, this earlier application should solve that part of the problem.

The winter cover crop experiment last year gave rather poor results with several of the varieties sown. However, that is quite useful information, as it gives indications as to what crops may not be safely sown. In the case of wheat and lupins the results were very satisfactory, the yields being well worth while in spite of the very adverse season. The fertilizer experiment conducted in conjunction with the winter cover crop experiment showed the importance of supplying nitrogen, even to legumes, in this soil, whilst superphosphate alone gave no significant increase over untreated plots. The work is to be repeated this winter.

The little leaf experiments have been advanced considerably and the results obtained show clearly that the trouble is essentially the same as occurs in South Africa and the United States of America on trees displaying comparable symptoms. With respect to curative measures, excellent results have attended the use of a zinc sulphate spray applied in the dormant season. This compound applied at other periods and in other ways has given less consistent results. The major points still to be decided in connection with this malady are the most effective strengths of the spray, having regard to duration of effectiveness, and general orchard practice. Little leaf experiments are also referred to in the report submitted by Mr. J. H. Simmonds, Senior Research Officer, Plant Pathological Section.

The work on probable boron deficiency was not as successful as might have been reasonably expected owing to the favourable seasonal conditions which have persisted since last winter. It is quite characteristic of many deficiency troubles that they are less in evidence during good seasons than poor ones. The work, however, has given valuable leads and, above all, observations have clearly indicated that great care must be exercised in applying boron to the soil, as though small doses may be followed by highly desirable results, large doses, which are still actually but small quantities, are likely to prove very toxic. The experiment will have to be repeated this year.

The soil studies of the Stanthorpe area have been continued as time permitted. Soil moisture determinations have shown that for all types examined the field capacity of the soil for water is very low indeed, and that therefore their correct management in the district will prove a difficult problem unless the wilting point is very much lower than is anticipated. Wilting points determinations are at present being carried out at Nambour.

Physiological studies have been continued, but further progress is dependent on the receipt of additional necessary apparatus which has been ordered and should be received in the near future.

A disorder of the Santa Rosa plums occurs rather commonly in the Stanthorpe district and this has been the subject of preliminary study. The cause of the trouble is far from clear but, as the result of the work carried out to date, it seems possible that a minor element deficiency is associated with the trouble, and accordingly it is now planned to test the effect of supplying a number of these elements in a series of trials.

BANANA.

The survey of horticultural research requirements recorded in last year's report showed that many cultural problems still have to be solved in the banana industry. Accordingly it was decided that the Division of Plant Industry (Research) and the Fruit Branch should pool all resources to this end, and attack the major problems on a co-operative basis.

Analysis of past experiments on banana fertilizing were made in order to find tendencies and so plan future work on this phase. Following this a comprehensive programme was drawn up and it is hoped and intended to commence experiments with the coming season's plantings.

A series of pot experiments has been commenced, the essential objectives being, firstly to grow the plants in media such that each of the plant food materials nitrogen, potassium, phosphorous, calcium, and magnesium can be omitted singly, and secondly, so that physiological studies can be pursued so that essential points in the growth cycle can be accurately known. In this way something should be learned of the deficiency symptoms and of the effects of various elements on the growth.

Root distribution studies have also been initiated. The objective in this work is to enable data to be obtained which will assist in determining points concerning fertilizer placements.

CITRUS.

In so far as citrus is concerned the research work commenced during the year has been that connected with soil moisture, through which it is hoped to learn something which may lead to improved methods of soil management in the non-irrigation areas and concerning irrigation practice in those districts in which irrigation is resorted to.

To these ends two experimental plots have been laid down, one at Montville and one at Gayndah. At Montville the frequent rains rendered progress out of the question since it was not possible to make any essential differences between any two soil treatments. Adequate sampling apparatus from overseas for use at Gayndah has arrived, and it is expected that progress at that centre will be rapid from now on. Soil moisture movements have been followed at Gayndah to some extent and something of the root distribution of trees on several types of soil has been learned. Further, some data has been obtained on the wetting value of controlled amounts of water. It is rather too early to make any definite statements, but the results to hand indicate that the practice of watering very heavily is not the best either for the trees nor is it financially sound. At present it would appear that on most soils a 2-inch irrigation gives the most efficient service.

The foliocellosis experiment which was interrupted for twelve months owing to absence overseas has again been taken up. The results to date strongly suggest that the zinc sulphate spray will provide adequate protection for even the most heavily attacked trees. The absence of a crop this year on the experimental block, however, makes it impossible to give any definite result.

PAPAW.

Good progress can be reported with the study of papaw varieties, particularly at the Bureau of Tropical Agriculture at South Johnstone, where Mr. Agnew is carrying out the work in conjunction with Dr. L. G. Miles, Research Officer. At that centre there are now several hundred trees of some nineteen varieties under observation. These trees are approaching fruiting. The intention then is to study the fruit quality and to carry out genetical work.

At South Johnstone also Mr. Agnew has been studying vegetative propagation and is now almost in a position to go ahead with field trials on this all-important phase of the work.

Mr. Agnew is furthermore engaged in making small scale pot manurial trials, and altogether it is felt that the papaw work is proceeding very satisfactorily there.

At Nambour, the seedlings raised from imported seed from Hawaii, Florida, and Ceylon have made very good progress, and the growth has been quite free from disease. Seeds should be available in the course of a few months, and when these are obtained they will be passed on to Mr. Agnew for incorporation in his trials.

MANGO.

The collection of information on mango varieties has been advanced sufficiently to allow of a selection of a number of varieties for stock and scion purposes, and a nursery containing about 400 seedlings from these selected trees has been established at the Bureau of Tropical Agriculture. This work is in the charge of Mr. S. E. Stephens, Instructor in Fruit Culture, who will thus soon be in a position to carry out work on propagation and stock-scion compatabilities.

An extensive programme covering four years' work has been drawn up, and the above studies represent the first section to be attempted.

AUSTRALIAN NUT.

The Australian nut work has been continued. At Buderim Mountain detailed observations have been carried out throughout the twelve months on some thirty selected trees. The object of this work is to discover any correlations which may exist between vegetative habits, fruit characters and yields on various types. Eight types have been differentiated on reproductive parts, but what amount of significance can be attached to these differences is not yet apparent.

Vegetative propagation methods have formed another phase of the work and, whilst many failures have to be recorded, the present outlook is that vegetative propagation may still be commercially possible. Mr. R. L. Prest, Instructor in Fruit Culture, is co-operating in this work, whilst in the matter of variety classification Mr. J. McG. Wills, one of the agents of the Banana Industry Protection Board, has supplied valuable data.

AVOCADO.

Mr. Prest has continued the avocado studies, and much information is now available concerning the types and varieties being grown in the south-eastern portion of the State. Following the next crop, it should be possible to classify the main types and this classification, together with data concerning yields and habits, should constitute valuable information for the growers.

Recently some 400 seed of Mexican and Guatemalan races have been received from California, and these have been planted at Nambour preparatory to work on asexual propagation.

The avocado work must be considered to be in a very satisfactory state.

STRAWBERRY.

A fertilizer experiment plot is being conducted at Montville. Both Aurie and Phenomenal varieties are included in this experiment which is designed to show the effects of nitrogen, potash, and phosphoric acid singly and in the four possible combinations. Until the crop is harvested it is not possible to give any indication of probable effects.

In addition to this at the Nambour Field Station an effort is being made to learn something of the status and nature of several abnormal conditions of strawberry plants which appear to result in losses to growers. In view of the common association between these conditions and several insects the work is being conducted primarily from an entomological angle by Mr. N. E. H. Caldwell, Assistant Research Officer, but there is much evidence to suggest that the problem will require horticultural attention in some instances at least, and thus horticultural aspects are being given attention concurrently.

PASSION FRUIT.

Following preliminary root distribution studies a passion vine fertilizer experiment was laid down in the late summer of this year. The general plan of the work is similar to that outlined for the strawberry fertilizer experiment. No crop has yet been harvested, and the only point which can be noted is the marked vegetative response of the vines to nitrogenous manures.

GRANADILLA.

Dr. Miles and Mr. Agnew have continued their studies of granadilla fertilization and their results have been most interesting and important. For confirmation and extension the work will be repeated in part and expanded next year. From the report submitted for publication it appears that artificial pollination may be successfully practised and is essential. Matters of cross and self fertilization are also discussed in that report.

DATE.

The work on date has been advanced a further stage by the raising of plants from seeds brought from California. Good germination was obtained with most of the varieties though, unfortunately, Maktoom and Zahidi are amongst the varieties which gave poor germination. As both of these varieties are ones which it is expected may be very valuable to Queensland further efforts to raise seedlings will be made. These plantings were made by Mr. Hodge, the manager of the Cotton Research Farm, at Biloela.

GENERAL.

During the year, lectures on horticultural research and its results were given at Palmwoods, Montville, Gayndah, and the Queensland Agricultural High School and College, and a field day was conducted by Mr. Ward at Stanthorpe.

No results of research work have been sufficiently far advanced to warrant publication, but some time was devoted to the preparation of two special reports. One of these, dealing with little leaf and dieback troubles in the Stanthorpe district, was prepared by Mr. Ward for the Imperial Horticultural Conference at London, and the other by the writer for the International Horticultural Congress, which meets in Berlin this year. The latter report dealt with the tropical and subtropical fruits of Australia, being the official report for the Commonwealth.

A report on horticultural activities would hardly be complete without acknowledging the assistance afforded by Miss Shield, Assistant to Research Officer, in connection with the lay-out of experiment plots and the analysis of data. This help is very material and gives a degree of confidence in the results which would otherwise scarcely be felt.

W. A. T. SUMMERVILLE,
Senior Research Officer (Horticultural Section).

(5) REPORT OF THE PLANT PATHOLOGICAL SECTION.

In this report of the Plant Pathological Section for the 1937-38 departmental year, a brief discussion is given of the main research projects undertaken and the results obtained to date. The projects are grouped under the names of the respective crops concerned.

CEREALS.

Wheat Bunt.—Mr. R. B. Morwood, Research Officer, continued his investigations regarding the control of cereal diseases by seed dressings. A semi-commercial trial, using copper carbonate and two mercury dusts on seed naturally infected with bunt, demonstrated the efficiency of each of these materials. It is considered that sufficient information is now available regarding the relative merits of the various bunticides marketed in Queensland, and it is not proposed to pursue this line of investigation further.

Flag Smut.—This disease is somewhat different from bunt as regards its relation to seed disinfection. Consequently, a separate trial was carried out using copper carbonate, two mercury dusts and bluestone treatments at varying strengths on lightly and heavily infected wheat. Owing to climatic conditions infections were low and it was difficult to assess the relative merits of the treatments used, although they all exerted a considerable degree of control. This experiment is being repeated and extended to include a commercial planting of naturally infected seed treated with copper carbonate and mercury dusts, from which it is hoped to obtain yield data.

Varietal Resistance.—The testing of the resistance of Departmental wheat crosses to bunt and flag smut was continued using heavily artificially inoculated seed. Two of the varieties, which include Bunge, Indian Pearl, Manitoba, and Florence in their parentage, were found to be quite resistant to bunt. The flag smut infection proved too light for definite conclusions to be made. This aspect of the work will be continued.

MAIZE.

Hyperplasia or Wallaby Ear.—The so-called "wallaby ear" condition was very prevalent in late planted maize crops throughout certain districts of Southern Queensland during last season. This trouble has reached serious proportions only at rare intervals during the last thirty years. Affected plants are stunted, the leaves are shortened and have a stiff erect habit with the margin incurved and the blade crinkled and puckered and the veins hypertrophied. Ear and tassel formation is usually reduced or inhibited. All grades of this abnormal development may be represented in a crop even to the stage of complete stunting and unproductiveness. Mr. F. W. Blackford, Assistant to Research Officer, who made a brief survey of the trouble, came to the conclusion that heavy rainfall, coupled with conditions of high humidity and temperature, has some adverse effect on the normal growth of the young maize plant resulting in the production of the disease.

PEANUTS.

Germination Losses and Wilt.—Following on the success obtained in preliminary work on the control of germination losses by the use of Ceresan, Mr. Morwood laid down a more extensive trial in the Kingaroy district with the object of obtaining data regarding the effect on yield. Treated and untreated seed were compared when sown at six different rates of seeding. The figures have been submitted to statistical analysis, and the results show a significanty improved stand, lower loss of mature plants from wilt, and a higher gross yield from treated plots.

TOBACCO.

The previous year's work on the control of mildew on tobacco seed bed covers was supplemented by further trials carried out by Mr. T. McKnight, Assistant to Research Officer, during the past summer and autumn months. The alum-lead acetate and Shirlan treatments previously recommended again proved most satisfactory. On the results obtained, preference should be given to the former, especially as it has been shown that the process may be simplified by reducing the operation to a single immersion.

A rotting of the stem near ground level which has caused considerable loss in young plants in the central districts was investigated by Mr. Blackford and found to be caused by the fungus *Rhizoctonia solani.*

BANANA.

Banana disease investigations have mainly consisted of laboratory experiments carried out by the writer with a view to rounding off the work on black end and anthracnose. The subject matter for an extensive publication dealing with these diseases is now practically complete.

An interesting record was the association of a species of *Marasmius* with a rotting of the side and base of the pseudostem of Lady's Finger bananas. It was found that the fungus was following an initial injury by an arsenic pentoxide weed spray.

CITRUS.

As an outcome of the good results obtained with the control of brown spot of the Emperor mandarin by home-made colloidal copper, Mr. Blackford investigated further aspects of the use of this fungicide as a citrus spray.

Colloidal Copper and Scalicides.—Using colloidal copper in a brown spot schedule on Emperor mandarins in a Howard orchard various scalicides, including soap and washing soda, soap and washing soda plus white oil, white oil and resin-caustic soda-fish oil, were applied as soon as one week after the fungicide without any observable injury. Incidentally, counts of fruit affected with brown spot at picking time gave further support to the recommendation of the three-spray schedule for the control of this disease. Infection was reduced from 16 per cent. on unsprayed trees to 4 per cent. on those receiving the colloidal copper.

Colloidal Copper and Scale Insect Population.—In conjunction with the experiment just referred to, an attempt was made to obtain definite information on the relative effects of applications of colloidal copper and Bordeaux mixture on scale inspect population. Estimates of the scale population on trees receiving one or other of these sprays were made by Mr. N. E. H. Caldwell, Assistant Research Officer. The results, however, were inconclusive, although general observations over a number of years indicate that the increase which commonly follows the application of several Bordeaux sprays is not serious when colloidal copper is substituted.

Colloidal Copper and Fumigation.—In co-operation with Mr. Caldwell, an experiment was carried out at Gayndah to determine the safe period after which cyanide fumigation may follow a colloidal copper spray. Although the information obtained will need further confirmation and elaboration it appears that fumigation may safely follow after a much shorter interval when colloidal copper has been used instead of Bordeaux. This may be related to the amount of copper spray residue retained by the leaves in the two cases.

Colloidal Copper and Black Spot.—An investigation of the relative efficiency of colloidal copper and Bordeaux mixture for the control of black spot was initiated at Howard, using late Valencia oranges. Results from this plot will not be available until the crop is picked. However, in the Gayndah district, where black spot is beginning to make its appearance in serious proportions, especially in the lemon crop, some growers have obtained good results with a single application of the colloidal copper spray. As the lemon has more than one setting of fruit it will probably be necessary to employ the two applications normally recommended in order to obtain full protection.

Rind Breakdown.—Following on the heavy and extended rains in May, many growers in both the coastal and inland districts suffered a severe drop of mandarins, chiefly the Emperor of Canton variety, and, in a few cases, of matured early oranges. Losses in many cases were very serious. The symptoms leading up to this drop are characterised by the appearance of an irregular light brown watersoaked area on the rind of the affected fruit near the stylar, or less frequently, the stalk end. Isolations from these areas in the early stages failed to reveal the presence of any parasitic organism, though they are quickly invaded by the common *Penicillium* if the weather remains wet. If dry weather follows, the tissue may dry and shrivel before invasion takes place, leaving a wrinkled brown area where the rind was affected. It is considered that the malady is due to the excessive absorption of water by the rind of mature fruit with the consequent liberation of oil, both externally and internally, causing the death of the tissues exposed to its influence. The trouble is greatly accentuated when the period of water absorption is followed by a sudden cold spell.

As a result of the spring and summer rainfall being much heavier than in previous years, both black spot and melanose were more abundant, and in some coastal districts reached serious proportions.

PINEAPPLE.

Mr. E. W. B. Da Costa, Assistant to Research Officer, attached to pineapple investigations, has availed himself of the facilities afforded by the plant pathology laboratory for conducting his researches into the etiology and control of the various pineapple fruit troubles, mainly black heart, brown speck and marbling. He is endeavouring to correlate the incidence of these diseases with certain physiological states of the fruit in the hope that control may be possible along cultural lines. This work is discussed in detail in the report of the Plant Physiology Section, submitted by Mr. H. K. Lewcock, Senior Research Officer.

PAPAW.

Yellow Crinkle.—There has fortunately been no recurrence of the somewhat serious development of yellow crinkle reported for the early part of 1937. The disease has remained in a quiescent state since then, and, where affected plants were systematically eradicated, little further development has taken place. There is ample evidence to show that merely to cut the top off affected trees is bad policy in so far as yellow crinkle is concerned, as, in a large proportion of cases, shoots coming away from below will carry the disease.

Suspected New Virus.—Another malady which has every appearance of being a second virus disease made its appearance for the first time in one locality. The main characteristics of this are an upbending of the leaf stalks and an abnormal development of the veins of the leaf which are broadened at the expense of the blade which is, in turn, reduced. The whole leaf is thickened and brittle, especially at the ends of the segments which become stiff and irregular, and often downcurved. There has been little or no extension from the original plants affected and, with the cold weather, new growth became more normal. It is too early to say whether this represents a case of recovery or a masking of symptoms. In a small trial no success was obtained in attempting to transmit this disease by mechanical sap transference to young papaws, but on tobacco there was produced a diffuse brown mottling of the leaves followed by death of the plant.

Dieback.—During the late summer and autumn of 1938 there was a serious development of a dieback closely resembling the one referred to in last year's report. At that time the disease was thought to be associated with drought conditions or, in some of the later cases, with a root rot following excessive rain. Drought conditions have not prevailed during the outbreak just passed and although some aspects have suggested the possibility of the disease being of a virus nature the more reasonable explanation appears to be that of a root trouble. It is tentatively considered that in certain soils, conditions following heavy and prolonged rain are conducive to the destruction of the feeding roots by soil pathogens. This results first in a wilting of one or more of the younger crown leaves, and then in the total collapse as previously described.

DECIDUOUS FRUITS.

Mr. Morwood was responsible for all deciduous fruit work, and included in his programme investigations on the control of apple powdery mildew, apple little leaf, plum spot, and anthracnose of the grape.

Apple Powdery Mildew.—Lime sulphur, colloidal sulphur, potash soft soap, and two different spreaders were used in a trial based on certain pathological and entomological experiments of the previous season. It was again demonstrated that colloidal sulphur or lime sulphur added to the insecticidal spray applied regularly will exercise a considerable control of mildew. The latter gave somewhat better results this season. The question of the best form of sulphur and spreader to include depends on the nature of the insecticide used, and it is considered desirable to await stability in this direction before endeavouring to obtain more precise information regarding the fungicide schedule. There is evidence that the vigour of the trees is an important factor contributing to the severity of the disease under Stanthorpe conditions.

Apple Little Leaf.—An experiment to test the efficacy of a spray containing zinc sulphate in controlling little leaf, laid down in April, 1937, resulted in a definite response in the treated trees in the following spring, and it is considered that commercial control will be possible. The problem is being further investigated by Mr. K. M. Ward, Research Officer, Horticultural Section, and reference is made to his work in the report of that Section submitted by Mr. W. A. T. Summerville, Senior Research Officer.

Plum Bacterial Spot.—The control of plum spot by the use of a Bordeaux spray was again demonstrated, but little further advance was made in respect to information on the number and times of application necessary owing to the loss of a large proportion of the fruit as a result of frost and storms.

Grape Anthracnose.—Owing to the wetter conditions prevailing this year there was an abundant development of anthracnose enabling definite results to be obtained from the control experiments. Four or five applications of Bordeaux mixture commencing at bud burst gave satisfactory control, whereas untreated vines sustained a complete loss. It is now possible to recommend the regular application of a Bordeaux mixture schedule on all susceptible varieties. The sulphuric acid-iron sulphate swab appears to be of little value under Stanthorpe conditions and should not be included in the programme. It is not intended that this investigation should be continued further.

TOMATO.

All tomato work was handled as before by Mr. J. E. C. Aberdeen, Assistant to Research Officer. In addition to research projects, an increasing volume of advisory work was attended to. In particular might be mentioned advice regarding the control of bacterial canker (*A. michiganense*) which, fortunately, has not so far occurred in epidemic form. A serious though localised occurrence of bacterial wilt was brought under notice, and an attempt will be made to effect control by means of soil amendments.

Fungicide Investigation.—Since writing the last annual report the results of the fungicide trials referred to therein have come to hand. Dry conditions were responsible for an almost complete absence of Irish blight, and therefore little evidence was forthcoming regarding the relative efficiency of the various fungicides in the control of this, the major disease. However, advantage was taken of the incidence of target spot in one of the three experimental areas to obtain some information concerning disease control. A more durable spray covering was obtained from the copper sprays than from the copper dusts. This was reflected in a better control of target spot exerted by the former. Home-made colloidal copper was equal to Bordeaux mixture as regards disease control, although the spray covering did not appear to be so durable. Commercial copper carbonate was not as efficient as the other copper sprays, but on the other hand has a less adverse effect on fruit setting.

Mr. Aberdeen is continuing this work during the present season, and has three plots laid down. The main objects are a comparison of standard wet sprays and dusts, and an investigation of the effect of varying the lime content of Bordeaux mixture.

Fusarium Wilt.—During the warmer months an investigation of the Fusarium wilt problem was commenced. The preliminary work has been largely confined to glasshouse experiments, but it is hoped to extend operations to field trials later. A number of the leading varieties of tomato from local and overseas sources have been tested against isolates of the wilt organism from several tomato growing districts in Queensland. Results to hand indicate an appreciable variation in virulence of the Fusarium strains from different localities, which may explain some of the anomalies regarding wilt resistance reported from time to time. The order of resistance of the tomato varieties has been more or less as expected, though the standard variety Break o' Day has not shown to any advantage. This variety appears to have become mixed in type as a result of the large call for seed in the early years of its introduction. Plants surviving the above tests have been planted in the field, and seed obtained from selfed flowers will be used for further trials during the next summer season.

FORESTRY.

The work of Mr. H. E. Young, Assistant Research Officer, in forest pathology has had for its major project the investigation of the fused needle disease of *Pinus spp.* In addition, attention has been given to a variety of problems which have arisen during the course of the silvicultural practices of the Forestry Sub-Department.

Fused Needle.—Experiments already under way have been continued and new ones instituted. These were mostly concerned with nutritional factors likely to be associated with the development of the fused needle condition. In certain of the fertilizer treatments complete control is now being exhibited. Analyses of the soil from fused needle sites revealed no chemical or physical factors likely to explain this beneficial result. Soil acidification has produced an improvement in the fused needle condition, while liming has depressed growth. Zinc sulphate applied as a spray to the foliage of *Pinus taeda* gave entirely negative results. Injection of various sugars in solution by medium of the roots has shown some response in affected trees of the same species. The experiment in which fused needle trees were connected by means of a large number of root grafts to healthy trees at first, as previously reported, gave negative results, but there is now a very considerable degree of recovery evident The accumulated evidence lends further support to the suggestion that the fused needle condition is bound up with mycological and nutritional factors in the soil.

Mycorrhiza Investigations.—The experiment in which eight introduced mycorrhiza forming fungi belonging to the genus *Boletus* were used to infect sterile *Pinus caribaea* seedlings has now reached a stage at which differences may be observed. A significant increase in plant development was produced by inoculation with six of the species as compared with that produced by the fungi normally present in Queensland plantations. One species, *B. viscidus* was particularly good in this regard. The seedlings will be set out under plantation conditions for observation of further developments.

Sulphur Bacteria.—The acidification of the Yarraman nursery soil by means of sulphur application has proved very successful, and an excellent crop of exotic pine is now being produced on the treated soils. Successful acidification of the Jimna nursery soil was also carried out after laboratory determinations of the sulphur requirements had been made. The organism responsible for the oxidation of the sulphur has been isolated in pure culture, and some of its physiological characters studied. The same bacteria is present at Yarraman and on the Atherton Tableland, North Queensland, but it differs from other described species of the sulphur organism.

Maple Gall.—Isolations made from maple, *Flindersia brayleyana,* seedling galls yielded a bacterium which was successfully inoculated into healthy seedlings with the production of typical galls. This supports the conclusions of Miss P. H. Jarrett, of the Council for Scientific and Industrial Research, though the organism is distinct from the crown gall pathogen, and appears to be a new species of *Pseudomonas.* Evidence suggests that the disease is soil borne.

Kauri Pine Leaf Cast.—The cause of Kauri pine leaf cast disease was successfully demonstrated to be the fungus *Hendersonula* n. sp. previously isolated. Successful inoculations were made on to both *Agathis palmerstoni* and *A. robusta.* A case of natural infection of the latter was recorded from the Gympie district.

Root Rots.—The results obtained from observation plots in North Queensland have shown that the causal organism, *Fomes pachyphloeus,* is not definitely associated with the dead stumps of any particular species of rainforest tree in the areas subject to root rot.

Rhizoctonia root rot of hoop pine seedlings was successfully transmitted by soil inoculation in the glasshouse. The perfect stage of this fungus appears to be *Helicobasidium compactum* which has been found associated with hoop pine.

Damping Off.—Experiments on the control of damping off in hoop pine seedlings have shown that malachite green used at a strength of 1 in 5,000 gives good results, and is harmless to the seedlings. This may prove a useful substitute for the Cheshunt mixture previously employed.

Mould in Eggs.—As an outcome of an enquiry as to whether moulds present on case timber were likely to infect eggs exported in cases manufactured therefrom, the effect of certain treatments for preventing mould decay in eggs was investigated in co-operation with the Poultry Branch. Shirlan AG proved to be an efficient mould preventive, both under cold storage and room temperature conditions, but was ineffective against bacterial rots.

VEGETABLES.

Vegetables are responsible for a large proportion of the routine enquiries, but only one research project was instituted in connection with them. Mr. Blackford carried out a field trial, using seed disinfection for the control of base rot, *Fusarium* sp., of the pumpkin. The soil infection of the causal fungus, however, was so high as to render seed disinfection of no value. The value of liming as a check on the disease is being considered.

The co-operation of the Agricultural Chemist has been sought on a number of occasions for pH determinations where adverse soil reactions appeared to be responsible for physiological disorders.

Some time was spent in assisting an attempt to establish a bean seed certification scheme.

GENERAL.

Mr. T. McKnight has been responsible for maintaining cultures of a number of strains of legume bacteria received from abroad. Appropriate material is prepared for use, when required for the Department's field experiments. Mr. McKnight was also responsible for a considerable amount of library indexing.

J. H. SIMMONDS,
Senior Research Officer
(Plant Pathological Section).

(6) REPORT OF THE PLANT PHYSIOLOGY SECTION.

Early in 1937, the Department was able to initiate a comprehensive five-year programme of research into pineapple problems, largely as a result of financial assistance received from growers, canners, and other interested bodies. On the reorganisation of research activities within the newly constituted Division of Plant Industry (Research), the officers engaged in pineapple investigational work were, with one exception, included in the Plant Physiology Section, and the activities of that Section have, so far, been confined to pineapple investigational work.

Since 1929 there has been a steady increase in pineapple production in Queensland. Prior to that time, the fresh fruit markets absorbed nearly two-thirds of the crop, the quantity available for canning varying between 200,000 and 250,000 cases annually. During recent years, however, consumption of fresh pineapples has not kept pace with production (there has been no appreciable increase in this direction since 1931) with the result that an increasing proportion of the crop has had to be handled by the canning factories. During the past seven years, the annual consumption of fresh pineapples in Australia has averaged about 400,000 cases. In 1936, the quantity of fruit supplied to the canneries (418,053 cases) exceeded for the first time on record that consumed as the fresh product (389,931 cases). Between 1st January and 30th June, 1938, approximately 400,000 cases of pineapples had been processed by the canning factories, and it has been estimated that an additional 250,000 cases will be available for this purpose before the end of the year.

This increasing reliance on canning for the disposal of the pineapple crop, and the recognition that cultivation methods suitable for the production of pineapples for the fresh fruit markets might not necessarily be the most economic for the production of canning pines, has directed attention to the need for greater efficiency in production methods.

Stated in general terms, the main objective of the pineapple investigations is the securing of a reduction in production costs through improvements in cultural practices. Owing to the wide range of soil and climatic conditions under which pineapple-growing is being carried on in Queensland, this objective necessarily entails the investigation of problems peculiar to individual districts, in addition to those fundamental to the industry as a whole.

Three main lines of investigation have been instituted, namely:—

1. Cultural studies.
2. Plant selection studies.
3. Studies on fruit quality in relation to disease incidence.

Included in the first line of investigation, viz., cultural problems, is the soils work of Messrs. L. J. Vallance, Assistant Research Officer, and H. L. Wood, Assistant to Research Officer, and the whole of the field experimental work being carried out with the assistance and co-operation of field officers attached to the Fruit Branch. The work on plant selection is being conducted at Nambour by Mr. H. M. Groszmann, Assistant to Research Officer, while Mr. E. W. B. Da Costa, Assistant to Research Officer, is wholly engaged on the third line of investigation, namely, fruit quality studies. Mr. Groszmann is actually an officer of the Horticultural Section, but he is, for the time being, associated with the officers of the Plant Physiology Section to work exclusively on pineapple plant selection problems.

FIELD TRIALS AND DEMONSTRATION PLOTS.

A major project at the present time is a comprehensive series of demonstration plots and field trials located in all of the chief pineapple-producing districts in Southern Queensland, and in several coastal areas in the Northern part of the State. Thirty-two such plots, each approximately one-third of an acre in extent, are at present under observation. Ten of these were laid down during the latter part of 1936, three more were planted in the Bowen district in the following autumn, and, with one exception, the remainder were initiated between October and December, 1937. Of this total, two plots are located in the metropolitan area, twenty between Wamuran and Gympie, three in the Rockhampton district, five at Bowen, one at Ayr, and one at Innisfail.

The field trials, which were laid down during 1936-37 were planted chiefly with the object of demonstrating the advantages accruing from recent innovations in cultural practices, such as closer systems of planting, grading of planting material, and the use of quick-acting chemical fertilizers. Small paper mulch trials were incorporated in two plots at Beerburrum for the purpose of obtaining preliminary data on the value of this material for retaining moisture in soils of poor water-holding capacity. The highly satisfactory growth obtained in these trials, despite extreme drought conditions during the early stages, suggested that paper mulch, properly used, might provide the solution for one of the major problems confronting the pineapple industry in Southern Queensland—namely, the profitable replanting of old pineapple areas. Soils which have been cropped with pineapples for any length of time have usually lost much of their capacity for retaining moisture, due to loss of organic matter. The 1936 trials indicated that paper mulch mitigates this disability to a considerable extent by reducing surface evaporation. Consequently, it was decided to include paper mulch trials in all of the demonstration plots laid down during 1937-38. Of a total of nineteen plots which have been planted this season, all but two have made highly satisfactory growth. Despite the drought conditions which have obtained in the Ayr, Bowen, and Rockhampton districts since the plantings were made, growth in the mulched portions of the plots has, with one exception, been particularly good, and stands out in marked contrast to the unmulched sections. All of the plots which are located in the Southern districts, have made good growth since planting, but, owing to the exceptionally good season, the contrast between the unmulched and mulched sections in these plots is not so marked at the present time as it is in those located in the drier Northern areas. Essentially the same methods of soil preparation, planting, and fertilizing have been employed on all of the plots whether paper mulch has been used or not, although minor modifications have been introduced in several of them to take care of variations in soil and climatic conditions. It is intended that the majority of these field trials shall be carried through a cycle of three crops, i.e., until 1940 in the case of the 1936 plantings, and until 1941 in the case of the 1937 plantings. The plant crop returns from most of the trials laid down in 1936 should be available at the end of this year; those from the 1937 plantings will not be available until next year. Harvesting on several of the 1936 plantings is now in progress, and a record is being kept of individual fruit weights, e.g., from 2,400 slip plants on an unmulched plot located on replant land in the Woombye district, 1,489 fruit had been harvested up to 30th June, for an average weight of 4 lb. 9 oz. each (tops on). If this average weight is maintained, the total yield from this plot for the plant crop should be at the rate of about 30 tons per acre. Such a yield will approximate to the tonnage being obtained from plant crop fields in Hawaii, and will greatly exceed the existing average acreage yield in Southern Queensland.

THE ACETYLENE TREATMENT TO INDUCE FLOWERING IN PINEAPPLE PLANTS.

Further trials with the acetylene treatment indicate that this treatment will be valuable under Queensland conditions, chiefly as a means of advancing the maturation period of the winter canning crop from July and August to April and May. Consequently, the period over which the treatment may be most usefully employed extends from the middle of September until the end of October. Applications made during the autumn and winter months have proved wholly unsatisfactory, as the fruit which develops is small in size and borne on inordinately long stalks. Similarly, disappointing results are obtained when under-sized or very young plants are treated. However, provided due precaution is exercised with respect to these points, the development of both fruit and suckers from acetylene-treated plants is normal in every respect.

A safe, efficient, and economical method of using acetylene treatment under the limitations imposed by local farming practices was worked out during the year with the co-operation and assistance of Messrs. Queensland Oxygen Pty. Ltd., and a detailed description of this method has already been published. Growers who have employed the recommended method report satisfactory results from its use.

THE EFFECT OF PARENTAL VIGOUR ON PLANT GROWTH.

A field trial has been laid down at Beerburrum to determine the effect of parental vigour on the rate of growth of planting material. The trial consists of side by side plantings of slips taken from (*a*) plants in a relatively low state of vigour, and (*b*) plants which had been fertilized consistently from planting. The low-vigour slips were taken from a plantation at Beerburrum, while the vigorous stock was obtained from the Nambour district. A striking difference in favour of the planting material taken from vigorous stock was apparent in this trial within three months of planting, and this difference in rate and type of growth has been maintained. Further studies along these lines, but confined for the present to individual plant families or clones, are to be carried out by Mr. Groszmann at Nambour.

FIELD TRIALS WITH SULPHATE OF IRON SPRAY FOR THE CORRECTION OF IRON DEFICIENCY SYMPTOMS.

Continuation of the trials instituted last year in the Mary Valley, and other trials commenced during the current season, have further demonstrated the value of regular monthly applications of sulphate of iron spray for the correction of iron deficiency symptoms in pineapple plants grown on soils which fail to respond to economic applications of sulphur because of their high buffer capacities. These trials have furnished additional evidence that, under Queensland conditions, iron deficiency in the pineapple plant not only leads to dwarfing and chlorosis, but also greatly increases its susceptibility to wilt.

FIELD EXPERIMENTS ON "CROOKNECK" DISEASE.

Field experiments have been carried out on a plantation in the Elimbah district with the object of finding a corrective treatment for a soil deficiency disease peculiar to the Caboolture-Beerwah area. This disease, because of the manner in which the heart leaves twist together and lean to one side, is popularly known as "crookneck," and it usually makes its appearance during the early stages of growth. Plants propagated from slips or crowns are much more subject to the disease than those grown from suckers.

Spraying young plants with a solution of boracic acid at monthly intervals has markedly reduced the incidence of the disease, as compared with its development on unsprayed portions of the trial area.

YELLOW SPOT DISEASE.

During October, 1937, a rot affecting pineapple fruits and crowns was reported by a Mary Valley grower which, on investigation, proved to be "yellow spot," an insect-transmitted virus disease which was first reported from Hawaii in 1926, but was not previously known to occur in Queensland. The outbreak of the disease in the Mary Valley was confined to a small section of one plantation and affected only maturing fruit in a plant crop field. Not more than one or two per cent. of the fruit were affected, but those which contracted the disease were rendered valueless. Since the initial outbreak, no further occurrence of yellow spot disease has been reported from any part of the State, nor has it reappeared in the plantation where it originally occurred. Consequently, it is not yet known to what extent the disease may ultimately affect pineapples under Queensland conditions, but it seems likely that its incidence in the State is controlled by climatic factors, since the insect vector of the causal virus, *Thrips tabaci* L., is known to be widely distributed throughout the pineapple-growing areas.

An illustrated article, describing the symptoms of yellow spot disease was published in the "Queensland Agricultural Journal" for December, 1937, and growers have been requested to notify the Department if plants or fruits are found which are affected with disease symptoms resembling those described in that article.

SOIL INVESTIGATIONS.

During 1937-38, the major line of investigation undertaken by Messrs. Vallance and Wood has been the continuation of the soil survey programme which was outlined in the previous annual report. The first of the projected series of soil surveys—namely, that dealing with the Beerburrum-Glasshouse Mountains-Beerwah area, was completed early in the year, and Mr. Vallance's report on this survey has now been published. As this report was necessarily somewhat technical in character, it was considered desirable to supplement it by a short non-technical discussion of the data with especial reference to its bearing on pineapple production in the districts surveyed. It is proposed to follow a similar procedure with respect to all subsequent surveys.

Field work on the second of the projected soil surveys, viz., that of the Palmwoods-Woombye-Nambour area, was finalised in December, 1937, and the laboratory investigations and classification of the type samples from this area are now nearing completion.

As the soil investigations proceed, it is becoming increasingly apparent that the vigour and productivity of the pineapple plant is dependent to a marked degree on the physical nature of the soil environment, quite apart from its chemical constitution. Consequently, in these investigations, the soil samples are being subjected to chemical and physical examination of the colloid fraction as well as to chemical and mechanical analyses of the samples as a whole. In addition, a number of estimations have been made of the silica-sesquioxide and silica-alumina ratios of the colloids from the A and B horizons, together with the determination of the iron present as free ferric oxide. These factors determine the plasticity and friability of the clay fraction of a soil, and it has been found that, in these respects, the lateritic and podsolic soil types of the surveyed areas differ markedly. The practical significance of these findings is supported by field observations on the occurrence of the diseases of pineapple plants known as "top rot" and "wilt." In the case of "top rot" a definite correlation was found to exist between the incidence of the disease and certain profile characteristics, while the occurrence of wilt in plantations where preventive cultural measures had been carried out was found to be restricted to areas from which the surface and subsurface layers had been completely eroded. On some farms in the Palmwoods-Woombye-Nambour district, it was found that such conditions hold over 1 per cent. to 2 per cent. of the cultivated area. From the point of view of pineapple culture in all of the districts so far surveyed, it is apparent that variations in the physical properties of the different soil types are of much greater significance than differences in chemical constitution, and it would seem that the texture and structure of the A and B horizons of a soil gives a much better indication of its suitability for this crop than is provided by a chemical analysis. A deficiency in any of the mineral plant foods may be remedied at relatively small cost, but the physical structure of a soil is not easily modified.

Since the range of soil types which occur in the Palmwoods-Woombye-Nambour area is much more extensive than it is in the Beerburrum-Glasshouse Mountains-Beerwah area, it has been found necessary to group the major divisions of the area as soil series. These in turn are divided into soil types with a further subdivision into phases. Because of the diversity of types, the laboratory investigation of the soils of the Palmwoods-Woombye-Nambour area has entailed the critical examination and analysis of some 200 separate samples.

In addition to the soil survey projects, Messrs. Vallance and Wood have also carried out considerable work of an analytical character in connection with other phases of the pineapple investigations, notably in connection with the extensive series of demonstration plots already referred to, while a large number of soil pH determinations have been made on behalf of the pineapple instructional staff.

PLANT SELECTION.

Following on a survey of the principal pineapple-growing districts of Southern Queensland and a thorough review of the relevant literature at Head Office, Mr. Groszmann was transferred to the Nambour Field Station in May, 1937, to initiate a plant selection programme in pineapples. No work of this character has previously been carried out in Queensland. However, the reconnaissance survey carried out by Mr. Groszmann disclosed that while the plant populations in some plantations are more heterogeneous than in others, variations from the original type are common in all fields. Most of these variations appear to have originated by mutation from the original type. Since some of these variations are obviously inferior to the average run of plants, while others may be markedly superior, the programme of investigation provides for work along two distinct lines—viz. (1) elimination of inferior genotypes, and (2) selection and propagation of superior genotypes.

Satisfactory progress has been made towards putting this programme into effect.

Elimination of Undesirable Types.—Little information is at present available as to which of the undesirable variations are hereditary in character and which, if any, result solely from environmental influences. Investigations to differentiate hereditary abnormalities from those due to environmental influences are being made with respect to fifteen recognisable "off" types. These studies involve the selection, propagation, and observation of ten clones of each objectionable type. A number of these, including several from the Bowen district, have already been planted, while the remainder have been marked in the field in readiness for planting next spring. These clonal plantings of inferior types, as well as most of the other clonal plants, are being made in the grounds of the Nambour Field Station.

The clonal selection studies on inferior types are expected to provide a sound basis for recommendations on mass selection. Pending these results, however, it is considered that the value of mass selection methods for effecting a rapid improvement in the type and yield of the fruit harvested can be demonstrated by more or less empirical methods—i.e., on the basis of desirable fruit and plant characteristics and the rigid avoidance of all defective types, whether or not the defect is known to be hereditary. Three such mass selection plots have already been completed, another is partly planted, while the planting material for five others has been selected and marked. All of these mass selection plots are located on growers' plantations. Each of the plots contains between 400 and 1,000 plants, the best clones being planted separately from the remainder. It is anticipated that an indication of the benefits to be derived from mass selection will be apparent on these plots during 1939-40.

Selection of Superior Genotypes.—The ultimate objective of the pineapple selection work is to secure a strain or strains of the Smooth Cayenne variety which will yield fruit of better average shape, size, and quality than the existing heterogeneous plant populations. One line of approach towards this objective is through the elimination of all undesirable plant types of an hereditary character. A second and more fundamental line of investigation is the selection and propagation of superior genotypes. Plant selection work of this character, however, is a long range project since it involves the repeated propagation, observation, and culling of a large number of clones through several seasons until all strains but those possessing uniformly desirable characteristics have been discarded. Mr. Groszmann has already selected more than 200 clones of apparent genotypic superiority from plantations in the North Coast districts and these are being planted at the Nambour Field Station for further observation as the planting material matures.

An additional fifteen clones have been propagated by the stump section method by which it is possible to obtain from twenty-five to thirty rooted cuttings from a single parent plant. Mr. Groszmann has evolved several modifications in the stump section technique which have proved most successful under Queensland conditions.

FRUIT DISEASE INVESTIGATIONS.

Throughout the year, Mr. Da Costa has been wholly engaged in continuing his studies on the various internal blemishes which affect pineapple fruits. It is becoming increasingly apparent from these studies that the incidence of the fruit diseases which cause most trouble in the canning factories is largely determined by the quality of the fruit itself as denoted by its sugar-acid ratio. Consequently, the physiological aspects of these diseases are assuming more and more importance as the investigation progresses, and increasing attention is being given to ascertaining the factors which determine fruit quality. Fundamental research of this character, though of a long range nature, is likely to have far-reaching implications, since it would appear that the problem of controlling internal blemishes in pineapple fruits is largely a problem of maintaining a high average standard of fruit quality under a wide range of climatic, soil, and seasonal conditions.

Marbling.—The disease of pineapple fruits known as "marbling" was first observed in Queensland in 1933. Until this year the disease has occurred only in the winter months and then only very sporadically. During the recent summer crop, however, a sharp and widespread outbreak of marbling occurred about the middle of the season and since this outbreak Mr. Da Costa has devoted practically the whole of his time to investigations on the disease.

It has been found that marbling is a bacterial disease and that the typical symptoms may be induced by artificial inoculation of pineapple fruits at the commencement of ripening. Moreover, field inoculation experiments have established that two distinct bacteria may cause marbling, and there is evidence that a third may do so under favourable conditions.

It has been found that individual fruits vary greatly in their susceptibility to infection, and elucidation of the factors underlying susceptibility will form a major part of the future work on this disease. Marbling is usually associated with low sugar content and low acidity. If it can be shown that these are contributing factors to infection and not merely the results thereof, it is obvious that cultural treatments tending to increase the concentrations of sugars and acids in the fruit will prove of value in reducing the incidence of the disease.

Brown Speck.—Investigations on this form of internal fruit rot have not yet reached a stage where control measures can be promulgated. It has been found that two distinct fungi are capable of inducing the brown speck condition in pineapple fruits. However, both of these organisms—viz., *Penicillium* sp. and *Fusarium* sp.—are relatively weak parasites, and their ability to induce brown speck is determined by a variety of factors, among which are weather conditions and the chemical composition of the ripening fruit. For this reason, inoculation experiments have so far been somewhat inconsistent.

It has been found that both fungi may occur in the one lesion and that infected tissue is frequently invaded by a variety of secondary decay-producing organisms. Unlike "marbling," no percentage increase in brown speck-affected fruit was reported by the canneries during the year under review, but it still remains a major source of loss in canning pineapples, particularly during the winter months.

Black Heart.—The occurrence of this physiological disorder is almost entirely restricted to the winter months. It has been found to be definitely associated with a low sugar concentration in the fruit tissues, but no such correlation has been disclosed with regard to variations in fruit acidity. The seasonal incidence of the disease is definitely correlated with the relatively low temperature conditions which occur during the winter months, but it is apparently controlled by other factors as yet not fully determined. It has been found, however, that "black heart," including the incipient form of the disease known as "mottle," is much more prevalent in fruits of poor canning quality, i.e., in those with opaque, white flesh, than in those possessing highly translucent flesh. Similarly, black heart has been found to occur to a much greater extent in fruit which has been picked in an immature condition than in those which have been allowed to remain on the plants until fully ripe. The investigations on black heart are being extended during the current winter.

General Activities and Acknowledgments.

As in previous years, a considerable amount of time has been devoted to duties of a semi-advisory character, especially with regard to giving lantern lectures, attending field days, and visiting plantations in connection with inquiries relating to matters of scientific interest. However, the great bulk of the advisory work arising out of the pineapple investigations has been carried out by officers of the Fruit Branch—viz., Messrs. W. J. Ross, P. Mitchell, W. J. Hancock, S. E. Stephens, K. D. Hoffman, and S. F. Kajewski. In addition to the valuable services rendered by these officers in an advisory capacity, they have each been intimately associated with the experimental and demonstration work being carried on in their respective districts; in fact, without the assistance and close co-operation of these officers, few, if any, of the field projects herein reported could have been instituted.

As in the previous year, donations of fertilizer for pineapple experimental work were received during 1937-38 from Messrs. A.C.F. & Shirley's Fertilizers Ltd., Messrs. Nitrogen Fertilizers Pty. Ltd., and the Pacific Potash Company. The generosity of these firms has contributed materially to the carrying out of the year's research programme.

H. K. LEWCOCK,

Senior Research Officer (Plant Physiology Section).

REPORT OF THE DIRECTOR OF AGRICULTURE.

After the death of Mr. Gibson, the late Director of Agriculture, in July last, I was appointed Acting Director of Agriculture and continued in that capacity until the following September, when my appointment as Director of Agriculture was confirmed.

STAFF CHANGES.

The principal staff changes made prior to my transfer to Brisbane were:—

Mr. N. Goodchild, Senior Instructor in Agriculture, from Rockhampton to South Johnstone as Officer in Charge, pending the appointment of my successor to the position of Director of Tropical Agriculture.

Mr. O. L. Hassell, Senior Instructor in Agriculture, from Atherton to Rockhampton.

Mr. W. Straughan, Instructor in Agriculture, from Rockhampton to Miriam Vale.

Subsequent to my appointment the following transfers were made:—

Mr. W. H. Bechtel, Instructor in Agriculture, from Atherton to Brisbane.

Mr. H. Hamilton, Instructor in Agriculture, from Mareeba to Atherton.

Mr. R. Cannon, Instructor in Agriculture, from Dimbulah to Mareeba.

Mr. H. McNee, Field Assistant, from Mareeba to Dimbulah.

Mr. E. Baird, Field Assistant, from Mareeba to Atherton.

Mr. C. Whitehead, Field Assistant, from South Johnstone to Mareeba.

SEASONAL CONDITIONS.

The year in agriculture was remarkable for the frequency and wide distribution of soaking rains, in contrast to the dry conditions which prevailed during the 1935-1937 period. While the incidence of the rainfall was not conducive to very heavy yields of wheat and maize, timely summer showers encouraged growth in pastures and ensured an abundance of fodder and grazing crops, large quantities of which were conserved in the form of silage and hay.

During June and July the rainfall was below average, although sufficient to enable wheatgrowers to complete their sowings. August weather conditions were decidedly better.

September rains were disappointing, but early summer storms in October and early November brought very welcome relief to all agricultural areas as far north as Mackay and provided sufficient soil moisture to permit of large scale sowings of all summer crops.

November rains extended to the far northern areas where a continuation of storm rains in December and January gave a further impetus to seasonal cropping.

Torrential rains were experienced in the far northern districts during February, but elsewhere hot, dry conditions prevailed which affected adversely the late maize crop.

Average falls were recorded in March and April, and were followed by good soaking rains in May, thus assuring a good winter and permitting of heavy seasonal June sowings of wheat throughout the grain-producing districts.

Dairy farmers and other stock owners took full advantage of the favourable conditions and heavy sowings of winter cereals and grasses for grazing were made, thus enabling them to face the winter with a much greater feeling of security than was possible for a number of years past.

WHEAT.

Weather conditions were unfavourable for an early sowing to any appreciable extent, except on lands which had been under fallow.

The main sowings were not completed until July, although generally the rainfall had not been sufficient to ensure rapid germination and unchecked growth.

In August beneficial rains fell over a wide area, and occurring at a critical stage of crop development assured largely the fairly good yields which were ultimately obtained.

The November storms caused some grain damage and also interrupted harvesting which, however, was finished by December.

The estimated yield of grain was 3,750,000 bushels which, considering the seasonal conditions, was very satisfactory.

The acreage sown solely for grain continues to increase, the area for 1937 being about 373,000 acres, an increase of approximately 90,000 acres over the 1936 season.

It is of interest to note that the variety Flora which was bred by Mr. Soutter, a senior research officer of this Department, displaced Florence for premier position, the area sown to Flora during 1937 being 55,813 acres. This variety is now attracting attention in New South Wales, as is instanced by the fact that a grower in that State was successful in winning the Commonwealth Champion prize with it at the last Sydney Show.

Approximately one-half the total area sown to wheat in Queensland during the 1937 season was placed under varieties bred by this Department.

Breeding work was continued on the area reserved for that purpose at Roma State Farm, and also in the Pittsworth district; in addition, observation plots were established throughout the Downs and Maranoa districts.

BARLEY.

An area of approximately 6,000 acres was sown to malting barley and 3,750 acres to other barleys, the yield of grain being substantially better than that for the previous season.

In addition to the area sown for grain an area of approximately 12,000 acres was sown for grazing purposes.

MAIZE.

Early sown crops returned reasonably good yields on the whole, but despite the generous summer rains the late sown crop did not yield as well as was anticipated earlier in the season. The yield in the aggregate, however, should show a decided increase on that for the 1936-37 season.

On the Atherton Tableland excellent conditions prevailed during the growing season and a record yield is anticipated.

Seed maize improvement work was continued along the usual lines, and plots of each of the approved varieties were established in different districts for the purpose of obtaining supplies of selected pure seed for distribution.

Work is also in progress at the Bureau of Tropical Agriculture, South Johnstone, and on the Atherton Tableland where strains adaptable to the climatic conditions peculiar to that region and of a different type of grain to that grown elsewhere in the State are being evolved.

GRAIN SORGHUMS.

Interest in the cultivation of the dwarf types of grain sorghum which were introduced by the Department in 1933 is growing, particularly in districts where standard farm machinery is available for harvesting. Results of trials have confirmed the value of some varieties as grain crops, especially in districts where the uncertainty of the rainfall has frequently caused the failure of maize grain harvests.

In the past season, yields of grain sorghum have been as high as 36 bushels an acre in localities where maize failed completely as a grain crop, because of adverse climatic conditions. Some varieties of proved adaptability to Queensland conditions have been selected for comparitive trials in different localities for the purpose of obtaining data on their yielding capacity and other characteristics.

Seed of other varieties was obtained by Mr. Wells in the course of his recent visit to the United States. Several plots of each have been planted at Roma, St. Lucia, and the Biloela Research Station, from which sufficient seed has been obtained for further trials on a more extensive scale. Pure seed and observation plots also have been sown in different parts of the State, of which results have been generally satisfactory.

TOBACCO.

The aggregate acreage planted with tobacco was a little larger than that of the previous year; 2,049,000 lb. of leaf is the estimated yield.

Weather conditions in the tobacco-growing areas were not favourable for heavy yields. Crops in the far northern localities were affected adversely by the torrential February rains; while, in other districts, lack of rain at critical stages of growth was the cause of considerably reduced yields.

The quantity of leaf submitted to auction at the current season's sales has already approximated 1,000,000 lb., for which competition was very active. Values advanced by 8 to 10 per cent. on last year's figures, and a new price level of 54d. was attained.

Tobacco growing has become a more stabilised industry, for the reason that it is now restricted, more or less, to areas suitable for the production of the type and quality which popular taste demands; and also because of the fact that most growers are now more experienced in the right cultural and curing methods.

There has been a noteworthy improvement in the quality of the leaf produced, as well as in its preparation for market.

A comprehensive programme of tobacco experimental work has been carried out by field officers in co-operation with the plant industry research staff of the Department.

FODDER CONSERVATION.

Seasonal conditions were generally favourable for the production of summer fodder crops, of which a large proportion was conserved as hay, stover or silage.

Requests for the use of the silo moulds which have been made available by the Department to farmers, on loan, have been more numerous than in any previous year. This is pleasing evidence of the increasing interest taken by agriculturists in this important aspect of rural economy.

Field officers have made a special effort to assist producers in every practicable way in their fodder conservation plans and practice.

An extensive and diversified programme of experimental work was conducted by field officers of the Agricultural Branch, in close and cordial co-operation with officers of the Division of Plant Industry (Research), on problems associated with the production of wheat, maize, sorghums, cowpeas, peanuts, Sudan grass, pastures and summer and winter fodders.

GENERAL.

The Department in co-operation with the Queensland Government Tourist Bureau and the Forestry Sub-Department arranged an exhibit at this year's Royal Sydney Show. From observation, the Queensland exhibit—which was arranged by Messrs. Stanley Birchill (Agricultural Branch) and Jas. Gregory (Fruit Branch) —made a deep impression on the popular mind of the extent, variety, and value, both actual and potential, of the resources of Queensland.

Officers of the Agricultural Branch have contributed articles and notes on field practice regularly to *The Queensland Agricultural Journal* and *The Weekly News Bulletin*.

To this general survey are attached summaries of the conditions and progress of agriculture during the past year in every division of the State, and which have been submitted by Messrs. N. A. R. Pollock, Senior Instructor in Agriculture (Southern Division); C. H. Defries, Instructor in Agriculture (Roma District); O. L. Hassell, Senior Instructor in Agriculture (Central Division); W. R. Straughan, Instructor in Agriculture (Miriam Vale); C. S. Clydesdale, Senior Instructor in Agriculture (Northern Division); E. R. Ashburn, Instructor in Agriculture (Bowen); T. G. Graham, Instructor in Agriculture (Townsville); Royce C. Cannon, Instructor in Agriculture (Mareeba); and N. E. Goodchild, Senior Instructor in Agriculture, Bureau of Tropical Agriculture, South Johnstone.

C. J. McKEON,
Director of Agriculture and Senior Research Officer.

STAFF REPORTS.

SOUTHERN DIVISION.

SEASONAL CONDITIONS.

During the year under review the rainfall at all recording stations was much better than for the past three years. So much so that at most centres the precipitations for the year have been recorded as above the average. The exceptions are noted in the north-east corner—Macalister to Bell—and in the south from Stanthorpe through to Goondiwindi. The months of July, September, December, and February were particularly dry at all centres, and in the majority in March. The months of August, October, November, January, and May, however, were well favoured, the precipitations at nearly all stations being well above the average. Particularly was this so in the month of May when falls, from 1 to nearly 4 inches above, being light and persistent, resulted in a desirable saturation of soils and subsoils.

Temperatures through the year were not abnormal, except in May and June when milder conditions prevailed with, in many directions, an absence of frost. The usual heat wave was experienced in February, which, as has been noted, was particularly dry.

PASTURAGE.

Though at times there was an indication of the pasturage drying off, particularly during February when hot dry conditions prevailed, there were no instances of acute shortage and no movements of stock for agistment outside the division as in the previous year.

The excellent rainfall in May, followed by favouring showers in June, coupled with milder temperatures, induced a good growth of herbage, such as various trefoils, cranesbill, &c., and in parts some Prairie grass which has improved stock condition and given an excellent start in the coming year.

FODDER CROPS.

Favourable rains in August promoted an excellent growth in winter sown cereals, which was most advantageous to dairy farmers. They also induced an early sowing of fodder crops for spring and summer growth. The good rainfall in October and November allowed further sowings, as did also that in January. Throughout the year there was, therefore, a good supply of forage, allowing supplies to butter and cheese factories to show a much increased output over the previous years.

CONSERVED FODDER.

Though there was an indication that the ensiling of fodder would receive more attention when good crops were available, it cannot be said that any appreciable increase in that direction occurred. A few more farmers conserved sweet sorghums as stover, but the number following that practice is still very small. Considerable quantities of lucerne, Sudan, and other crops, however, were stored as hay.

WHEAT, OATS, BARLEY, AND CANARY SEED.

In the report at the close of the previous year the outlook for these crops was by no means bright, particularly with the longer season wheats which had been early sown. These, it was noted, persisted in producing flowering stems, suggesting an early discontinuance of grazing. The good rainfall of August, however, was of great benefit to such crops and to all that were later sown, and it was then anticipated there would be a record output of wheat. Over average rainfalls in October and again in November, however, induced an infestation of rust in the majority of crops which greatly reduced the yield. In a few instances, also, late frosts were damaging.

Most of the oat crops were either grazed to the end or cut for hay, very few being harvested for grain.

Barley crops were not collectively of large acreage, nor was the average yield therefrom worthy of comment.

Canary seed also was not extensively grown, but provided some profitable returns. This crop is considered worthy of more attention, as its value for feeding off and for hay is considerable.

The outlook for the coming season is very bright, owing to the excellent rainfall of May followed by serviceable falls in June. Abundance of soil moisture is present to practically assure a crop. Excellent germinations and subsequent growth are apparent in all crops lately sown, while the growth in those earlier sown is with difficulty being kept down. Some rust has made its appearance in these latter, but with the usual frosts in July its spread will most likely be checked.

POTATOES.

A higher price than usual for seed and the absence of own seed from previous plantings were responsible for a lowering of the total of the areas usually sown in August and September. From such crops, however, the returns were regarded as fairly profitable. The late January and February sowings, on the other hand, were not satisfactory, poor yields being general. The experiments with potatoes after green manuring, with fertilizer mixtures and a control, were void of comparative value owing to lack of sufficient rainfall up to the flowering period at Glencoe and throughout the period of the crop at Swanfels.

MAIZE.

Early sown crops that received benefit from the good rains of October and November yielded in most cases what were regarded as worth while returns. Those, however, late sown, which tasselled in late January or February, were disappointing, the returns being very low. The total acreage of areas sown is considered to be less than usual, due largely to the failures experienced in the past two years.

The susceptibility of maize to damage from a check in growth, due to encountering a dry and hot period, such as is usual on the Darling Downs in January and February, renders the crop less attractive than in directions of better rainfall. It is anticipated that, as the value of grain sorghums becomes better known, they will displace maize in many centres.

COTTON.

Very little attention has been paid to the production of cotton in the Division during the past year.

Owing mainly to the heat wave which occurs each summer during a more or less dry period when the crop would be flowering and setting bolls, cotton is not suggested as a profitable crop except in certain soils where irrigation is practicable.

In the Texas-Yelarbon direction, where many of the soil areas are suitable for and possible of irrigation, cotton production should be as profitable as elsewhere in the State. During the past season a small crop at Beebo was cultivated and irrigated at intervals. Growth of plant and the setting of bolls were attractive, and it is understood the return, though the figures are not yet available, was profitable. This success will probably encourage further attempts in the coming season.

COWPEAS.

In order to popularise the growth of cowpeas for fodder purposes, and to demonstrate its value for a succeeding crop through its effect on the soil, small quantities of seed of several kinds were supplied to each of twenty persons in widely scattered centres. Neglect to cultivate in several instances was responsible for lack of result, owing to weed dominance. In others it was not possible to inspect or to determine yields, but generally it may be said that the behaviour of the crop has been favourably noted and its culture likely to be extended. The following results at the acre rate were determined at the centres named:—

Centre.	Black.	Clay.	Groit.	Poona.
	T. C. Q. L.	T. C. Q. L.	T. C. Q. L.	T. C. Q. L.
Bell	4 18 0 24	5 10 0 0	4 10 1 12	5 0 0 20
Jandowae	1 19 1 4	1 3 3 20	1 7 2 0	1 11 1 20
Warra	3 10 2 24	5 6 0 8	5 6 0 8	7 13 0 24
Mywybilla	2 18 3 20	3 2 3 12	3 10 3 24	3 14 2 16
Glencoe	10 4 1 4	11 7 3 12	11 15 2 24	..
Allora	4 10 1 12	5 13 3 20	4 18 0 24	..

SWEET SORGHUMS.

The saccharine sorghums are largely grown by dairy farmers to supply winter forage for dairy cows. When young cereal crops are grazed or a legume hay fed in conjunction, a desirable nutritive ratio is obtained in the quantity daily consumed. Too many, however, feed the crop alone, when the return is not so satisfactory.

Recently the attention of sheep owners was attracted to the crop with gratifying results. So much so that the acreage devoted thereto is expected to rapidly increase each year. Cattle raisers are also showing some interest in the crop as a means of topping up for the early spring market.

The varieties generally grown are crosses of imphee and sacchaline, with occasional stands of Sudan or grain sorghum varieties. It is rarely a crop would approach purity in either. Pure seed of the Honey variety was sown in several areas last season, so that larger areas of this kind are expected to be sown this coming year. Each of those who grew it expresses great satisfaction at its heavier yield, extra palatability owing to higher sugar content, and lower fibre content due to longer internodes.

GRAIN SORGHUMS.

Had seed been available of the dwarf kinds grown the previous year considerable acreages would have been cropped. Those who were enabled to secure seed, not in all cases pure, express great satisfaction with their returns and have intimated their intention to extend the area devoted thereto.

Seed selection areas for pure seed supply were not attended with satisfactory results, due mainly to lack of cultivation. Consequently, supplies of Wheatland Milo and Brown Yolo will only be available. The supply of pure seed limited to just sufficient to sow one acre of each is regarded as likely to retard the popularity of this attractive crop. Owing to the likelihood of bird attack such areas were arranged amongst the larger wheat growers where such danger is negligible. In those directions tractor power is almost solely employed, so that inter-row or other cultivation of a single acre is not inviting. With larger areas or more of them there would be a much better opportunity of securing ample pure seed supply and of advertising the possibilities of the crop.

FEEDING VALUES.

In order to secure data concerning the fodder value of these sorghums, at the flowering stage and later when the grain had matured and been removed, small plots of the five kinds were grown at Toowoomba. Samples therefrom were submitted to the Agricultural Chemist at both stages for anaylsis; also seed from other sources as sparrows devoured that on the plots.

COMPLETE ANALYSES OF WATER-FREE MATERIAL IN FLOWER.

Variety.	Dry Matter.	Crude Protein.	N Free Extract.	Fibre.	Fat.	Ash.
Dwarf Pink	100	13·9	65·1	11·4	1·3	8·3
Kalo	100	15·1	62·1	11·9	1·1	9·8
Brown Yolo	100	15·4	62·6	12·3	1·3	8·4
Wheatland Milo	100	16·0	62·2	9·7	1·3	10·8
Day Milo	100	15·9	64·1	10·2	1·1	8·7

COMPLETE ANALYSES OF WATER-FREE MATERIAL AFTER SEED HEAD WAS REMOVED.

Variety.	Dry Matter.	Crude Protein.	N. Free Extract.	Fibre.	Fat.	Ash.
Dwarf Pink	100	11·6	50·5	26·5	1·0	10·4
Kalo	100	13·4	43·0	28·4	0·8	14·4
Brown Yolo	100	14·4	45·9	26·2	0·7	12·8
Wheatland Milo	100	17·7	43·0	24·6	0·7	14·0
Day Milo	100	15·2	42·1	26·0	0·8	15·9

COMPLETE ANALYSES OF GRAIN, WATER-FREE.

Variety.	Dry Matter.	Crude Protein.	N. Free Extract.	Fibre.	Fat.	Ash.
Dwarf Pink	100	16·0	76·0	3·4	2·6	2·0
Kalo	100	13·9	77·0	3·5	3·6	2·0
Brown Yolo	100	12·3	77·5	4·1	4·0	2·1
Wheatland Milo	100	14·0	76·0	2·8	5·1	2·1

Applying the digestive coefficients for Milo to the complete fodder analysis the following shows the digestible nutrients of each:—

DIGESTIBLE NUTRIENTS PER 100 LB. OF WATER-FREE MATERIAL IN FLOWER.

Variety.	Crude Protein.	Other Nutrients.	Total Nutrients.	Nutritive Ratio.
	Lb.	Lb.	Lb.	Lb.
Dwarf Pink	6·53	57·95	64·48	8·8
Kalo	7·09	55·67	62·76	7·85
Brown Yolo	7·23	56·41	63·64	7·8
Wheatland Milo	7·52	54·71	62·63	7·27
Day Milo	7·47	56·12	63·59	7·5

DIGESTIBLE NUTRIENTS PER 100 LB. OF WATER-FREE MATERIAL, LESS SEEDHEAD.

Variety.	Crude Protein.	Other Nutrients.	Total Nutrients.	Nutritive Ratio.
	Lb.	Lb.	Lb.	Lb.
Dwarf Pink	5·33	51·08	56·41	9·58
Kalo	6·16	46·93	53·09	7·61
Brown Yolo	6·62	47·51	54·13	7·1
Wheatland Milo	8·14	44·51	52·65	5·46
Day Milo	6·99	44·88	51·87	6·33

DIGESTIBLE NUTRIENTS OF GRAIN PER 100 LB. WATER-FREE AFTER APPLYING DIGESTIBLE COEFFICIENTS FOR MILO IN AN UNBALANCED RATION.

Variety.	Crude Protein.	Other Nutrients.	Total Nutrients.	Nutritive Ratio.
	Lb.	Lb.	Lb.	Lb.
Dwarf Pink	9·12	71·69	80·81	7·86
Kalo	7·92	74·59	82·51	9·41
Brown Yolo	7·01	76·30	83·31	10·9
Wheatland Milo	7·98	73·45	81·43	9·2

DIGESTIBLE NUTRIENTS OF GRAIN PER 100 LB. WATER-FREE AFTER APPLYING DIGESTIVE COEFFICIENTS FOR CRUSHED KAFFIR WITH A LEGUME COMPARED WITH THOSE OF MAIZE AND WHEAT IN "FEEDS AND FEEDING."

Variety.	Crude Protein.	Other Nutrients.	Total Nutrients.	Nutritive Ratio.
	Lb.	Lb.	Lb.	Lb.
Dwarf Pink	12·96	76·23	89·19	5·9
Kalo	11·25	78·91	90·16	7·0
Brown Yolo	9·96	80·39	90·35	8·0
Wheatland Milo	11·34	80·18	91·52	7·0
Maize	8·38	87·42	95·8	10·4
Wheat	10·24	78·92	89·16	7·7

In estimating the value of the fodder according to the analyses, which is of the moisture-free material, it is suggested to take one-fifth of the quantities to allow for 80 per cent. of moisture in the material at the flowering stage, and one-quarter to allow for 75 per cent. of moisture when the grain has been harvested. Though the total of nutrients per 100 lb. is nearly 10 per cent. higher at the flowering stage than when the grain has been removed the nutritive ratio at both stages is very satisfactory. In the latter, as might be expected, there is a greater fibre and ash content, but little less crude protein owing to a renewal of growth from the stems.

The comparison of the digestible nutrients of the grain when fed with a legume with those for maize and wheat, as given by Henry and Morrison, extended to the same moisture-free state is illuminating. Though the total nutrients of maize is a little higher the nutritive ratio of the sorghum grain is much more attractive. With wheat the total of nutrients is very similar and the nutritive ratio equally attractive.

For computing a feeding ration nine-tenths of the amounts per 100 lb. should be calculated to allow for 10 per cent. of moisture.

The value of grain sorghum is thus amply illustrated. Not only is the crop capable of yielding a greater return of grain with a most suitable nutritive ratio, but the balance of the plant, when the grain is removed, is much more nutritious, and possesses a palatability lacking in maize stalks and wheat straw.

Fat Lambs.

In fattening lambs or mature sheep the dwarf types of grain sorghums can be commended. The crop can be matured and the grain removed at a time when it is usual to feed off the young growth of wheat or other cereals. Grazed for portion of the day on the young cereal growth and for the balance on the sorghum stalks a more desirable nutritive ratio would be secured in the amount daily consumed. Scouring, due to excess protein in the very young cereal growth, would be obviated and a better progress expected. When sufficient condition had been obtained a topping up with a ration of the grain, preferably combined with a legume hay as roughage, would provide that bloom on the carcase which is lacking when animals are fed wholly on young green material.

Sudan Grass.

The Sudan grass crops usually grown on the Darling Downs, and frequently grazed by stock at all periods of growth, show in almost all cases a cross with other sorghum varieties. This is, of course, to be expected when different varieties are grown in proximity. Such crosses, though showing a dominance of Sudan characteristics, are apt to carry more poison in the immature growth than in a pure Sudan. Several instances of poisoning therefrom have been brought under notice, and it is satisfactory to report the efficacy of the antidote advocated. This, whenever given, is regarded as having saved life.

A strain of selfed seed from a plant of desirable characteristics was propagated in the year 1936-37, and seed therefrom sown in an isolated situation near Evanslea last season. Growth was good and remarkably even, while each plant showed fine stems and the grass type of pure Sudan. The plot created much interest, many observers expressing a wish to secure seed later on. All seed from this crop has been saved, and arrangements made with the grower to seed a much extended area in the coming year.

An analysis of the young growth when a foot high and of the plant when in flower gave the following results in water-free material in 1 lb. per 100 lb.:—

—	Dry Matter.	Crude Protein.	N Free Extract.	Fibre.	Fat.	Ash.
Young growth	100	32·0	35·5	18·2	2·9	11·4
In flower	100	13·1	47·0	31·1	1·2	7·6

The crude protein, it will be noted, is extremely high and much more than could be expected from wheat or oats at a similar stage of growth. Should such growth be proved to be non-poisonous its milk-producing quality will be of extreme value.

In growth at the flowering stage the crude protein content is also very satisfactory, being higher than that usually credited to Sudan.

Chick Pea (*Cicer arietinum.*)

Some years ago a trial was made of this legume in the Northern Division, but failure resulted, due apparently to high soil temperatures. Through the courtesy of Mr. Paltridge, of the Council for Scientific and Industrial Research, a small quantity of seed was secured and a trial made during the year at Toowoomba. This was very satisfactory, the plants making good growth, from which a fair quantity of seed was saved. From some shed seed a few plants grew, and resisted an extra heavy frost on 28th June. Analyses of the mature plant, with seed and pods removed, and a determination of the protein content of seed and pods, respectively, were made by the Agricultural Chemist.

Analyses of Mature Water-free Material, less Pods.

—	Dry Matter.	Crude Protein.	N Free Extract.	Fibre.	Fat.	Ash.
	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.
Plant only	100	18·6	38·3	29·5	1·1	12·5
Seed only	100	35·1	..	..	....	
Husk only	100	15·6	..	..	..	..

The crude protein appears to be greater than for lucerne in bloom when freed of water and even better at later stages of growth.

Its fodder possibilities, especially for sheep, are attractive. Two crops appear possible in a year, one sown in early spring and the other in February or March. The latter could be expected to carry into the winter. On self-mulching soils there appears a possibility of an appearance each year from shed seed. Trial in this direction is forecasted in the coming year.

Pasture Grass Introductions.

After the adverse conditions of the preceding two years the favourable rainfall of that under review was of much benefit to the grass introduction plots in Neil street, enabling quantities of seed of many varieties to be collected. While the drought resistance of many of the kinds was exemplified in the previous year, their productiveness in a good season was well illustrated in that just past.

The work in progress has received much notice and commendation from visitors, while the applications for root divisions and seed have been considerable. Upward of 20,000 of the former were supplied, but owing to the adverse seasons previously experienced very little seed was available.

Success in propagating from material thus supplied was varied, while quite a number reported failure. Want of success in most instances was found to be due to lack of sufficient attention, and in some to the root material having dried out through delay in transit.

The following kinds are at present available either as root divisions or as seed: —

Kikuyu (*Pennisetum clandestinum*).—Has done well, but is only suggested on the crest or immediate slopes of the Dividing Range where the rainfall is about 30 or more inches per annum. Roots and cuttings available in quantity.

Budgee (*Cynodon plectostachyum*).—Has done remarkably well at Toowoomba, Bell, and other directions and is recommended on hillsides. It is easily cut with frost. Roots in quantity are available. So far no seed has been set at Toowoomba.

Woolly Fingers (*Digitarias-eryantha, polevansi, valida,* and *pentzii*).—Each of these has shown great drought resistance, but all are bleached by frost. Ample supplies of root divisions are available.

Tussock Love Grass (*Eragrostis curvula*).—Though rather harsh in appearance this grass has proved palatable to stock, while its fodder value is good. In drought resistance it is outstanding and is recommended for ridgy or sandy country. It is likely to spread from shed seed. It is lightly bleached by frost. Root divisions and seed are held in fair supply.

Eragrostis superba.—From one plant a small plot was planted by root divisions. It is not very attractive. A few root divisions only are available. It is lightly touched by frost.

Ditch Millet (*Paspalum scrobiculatum*).—A plot was planted from root divisions. Growth after rain was phenomenal, but it is badly affected by frost. A few root divisions only are available.

Paspalum plicatum.—A small plot was secured from seed sown in January. It is a strong grower, but somewhat coarse and very subject to damage from frost. Only a few root divisions are available.

Fine Stemmed Guinea Grass (*Panicum maximum* var.).—This grass has done very well, producing a heavy yield of fodder. Its analysis revealed a good nutritive quality. Seed and root divisions are available.

Purpletop Guinea Grass (*Panicum coloratum*).—This grass evidently requires warmer conditions, as in yield of fodder it compares unfavourably with the fine stemmed Guinea grass. It is also more subject to frost. Root divisions and a little seed are available.

Panicum marikarikensis.—A plot of this grass was grown during the year. It made heavy growth, but its coarse nature and woody stems render it unattractive. Kept down by stock it may do better, but it is thought, like Blue Panic (*Panicum anidotale*), its space might well be occupied by better kinds.

Panicum isachne.—This low growing species of annual duration is understood to be troublesome in orchards or other cultivations. It should, however, be a useful grass for sheep and has given promise on a heavy clay near Yelarbon.

Ischaemum sulcatum.—This is also a low growing grass that may have some value in sheep country on certain soils. Its value, as with the preceding kind, will lie in its ability to reproduce from seed each year.

Buffel Grass (*Cenchrus ciliare*).—This grass has yielded heavily throughout the year and is regarded as likely to be of good value in many parts of the division. It is cut to an extent by frost. A fair quantity of seed is available.

Birdwood Grass (*Cenchrus biflorus*).—A small plot was secured from seed sown in January. It has not shown the productiveness of Buffel, but may do better in the coming year.

Feather Grass (*Pennisetum masaicum*).—This grass made good growth, allowing a quantity of seed to be saved. It was badly cut by frost. Its value has not been determined for the Darling Downs.

Perennial Flinders (*Iseilma laxum*).—From a few roots a full plot was planted up early in the year. An excellent growth occurred, allowing a fair quantity of seed to be secured. This is regarded as a very valuable grass for heavier soil types and is being specially recommended for brigalow and other black soils. It has been found to be palatable to stock when the growth has dried off. Another pleasing feature is its spread naturally from shed seed.

Chloris pycnothrix.—This has proved an excellent grass capable of reproduction each year from shed seed. It is of annual duration and has provided much feed in the summer months. A fair quantity of seed has been saved.

Chloris conterei.—A new introduction which shows some promise. As seed was sown in January last there has been insufficient time to determine its value.

Frost-resistant Rhodes (*Chloris distichophylla*).—This grass was also called winter-growing Rhodes though it does not appear to make growth in winter and does not resemble Rhodes in appearance. It is certainly frost-resistant. It has been found to carry a hydrocyanic acid yielding glucoside, as has been Crowfoot (*Eleusine indica*). Like the latter, it is not palatable to stock, so consequently danger from poison is minimised. It is regarded as of little value, and will be eradicated when space is required for a better sort.

Para Grass (*Brachiaria mutica*).—The fodder value of this grass is well known, but its behaviour in winter on the Darling Downs has to be determined before it can be recommended. Two root divisions planted in January made excellent growth which was badly cut by frost. Observation will be made of its behaviour next season should it survive after the winter.

Brachiaria brizantha.—This grass made excellent growth and provided a large amount of fodder which proved palatable and nutritious to stock. It is unfortunately very subject to frost, but should prove of value in the districts of more favoured rainfall. Some seed is available.

Marcelle Grass (*Urochloa tricopus*).—For dairy cows this is probably the most attractive of the introductions, since it has proved most productive as well as being extremely palatable and nutritious. The plants tiller well and provide abundance of leafage. It is unfortunately badly cut by frost. Some seed will be available.

Urochloa pullulans.—This is also an attractive grass but of less compactness than *tricopus* and provides less leafage. It is also very subject to frost. Some seed will be available.

Urochloa bulbodes.—This grass cannot be regarded as suitable for the Downs since it evidently requires warmer conditions. It is far less attractive than the preceding species and provides very little seed. It is not considered worthy of further attention.

Urochloa panicoides.—This is an annual species natural to parts of the Darling Downs and appears partial to black soils and volcanic loams. During the past year it appeared in quantity on a number of farms near Swan Creek and Swanfels. It was there noted as being extremely palatable and milk productive. A sample of growth from the plot in Toowoomba cut when 1 foot high before flowering gave a very high protein content.

Callee Grass (*Sporobolus virginicus* var. *minor*).—This grass, known also as Estuary couch and Saltwater couch, gives promise of value as a soil binder in the prevention of erosion as well as in providing forage. The plot was planted from root divisions early in summer and made a wonderful growth. It is unfortunately cut by frost. An ample supply of roots will be available.

Frost Resistant Grasses.

Advice is frequently sought of grasses that would make sufficient growth in the winter months, or, alternatively, of kinds that, being resistant to frost, would make growth in March, April, and May to carry stock through June, July, and August. These, of course, to be of perennial habit or capable of reproduction from shed seed each year. Repeated trials over many years demonstrated the unfitness of Ryegrasses, Cocksfoot, and Phalaris tuberosa owing to their inability to survive the usual heat wave in summer and to reproduce from shed seed in the season following. Trials of other frost-resistant kinds were therefore suggested, particularly of Agropyrum species, one of which, *A. scabrum*, is natural to the Downs, and also species of other genera. In the previous year a few plants of *Agropyrum intermedium*, *A. desertorum*, and *A. sibiricum* were raised which withstood the hot and very dry conditions of summer and made growth under frosty conditions during the winter. These were so promising that seed of further species and of other kinds was sought and kindly supplied from the Council for Scientific and Industrial Research. The amount of seed of each was very small, but it has been possible to raise a number of plants of each which next season will allow of plot extension to secure seed for trials elsewhere. The following kinds have shown promise: *Agropyrum intermedium*, *A. cristatum*, *A. caninum*, *A. sibiricum*, *A. desertorum*, *A. elongatum*, *A. orientale*, and *A. villosum*. The latter is particularly vigorous, being a little over 2 feet in height without sign of seed head. The others are tillering well and presenting attractive leafage without at present any stem growth.

The Grama Grasses—*Bouteloua gracilis*, *B. curtipendula*, and *B. chondrosoides*—have resisted the heat of summer, but do not appear to make sufficient growth to be of much value in winter.

Others that show promise are *Erharta erecta*, *Festuca mairei*, and *Brachypodium phoenicoides*, all of which are making growth at the end of June.

During a period of recreation leave a visit was paid to Canberra when, in company with Dr. McTaggart, of the Plant Introduction Branch of the C.S.I.R., an inspection was made of the more recent introductions growing there under quarantine. As a result of this inspection and of others in the plots at Lawes, it is hoped that some forty additional grasses and legumes will be added to the trials in Toowoomba during the coming year. These will, of course, comprise many of summer as well as of winter growth.

Fodder Analyses.

Owing to an anxiety to secure as much seed as possible for extension work little grass material was submitted for analysis during the year. The results of such analyses of the water-free material in lb. per 100 is as follows:—

	Dry Matter.	Crude Protein.	N. Free Extract.	Fibre.	Fat.	Ash.
Urochloa panicoides (before bloom)	100	31·8	29·5	19·6	1·9	17·2
Guinea Grass (young growth)	100	24·9	39·1	21·2	2·2	12·6
Guinea Grass (in early flower)	100	17·7	38·5	30·3	1·0	12·5
Kikuyu (October growth)	100	26·9	35·5	20·8	2·1	14·7
Budgee (October growth)	100	30·0	36·7	19·3	3·1	10·9
Digitaria valida (October growth)	100	23·4	38·9	25·2	2·4	10·1
D. eryantha (October growth)	100	19·0	41·2	26·5	2·3	11·0
D. pentzii (October growth)	100	18·7	43·0	28·5	1·9	7·9
D. polevansi (October growth)	100	20·9	43·6	24·0	2·2	9·3

The fodder values of Urochloa panicoides and Budgee (*Cynodon plectostachyum*) are remarkably good. So also are those of Kikuyu and Guinea grass before bloom.

Tobacco.

The tobacco crops in the Texas, Yelarbon, and Inglewood districts during the year have shown an increase in yield and quality over the previous year, which also showed a marked advance on those preceding it. Seasonal conditions were much more propitious and only on two farms was a shortage of water for irrigation experienced. On two other farms some loss was experienced from a hail storm accompanied by heavy wind.

Seed-bed troubles were negligible and little trouble was experienced in the field from plant diseases. Insect pests were generally controlled, but during harvest some leaf was rendered useless by the stem borer operating in the leaf. On one farm damage was sustained from the wingless grasshopper, 3 acres having to be replanted.

During the past year there was an increase of twenty-six growers and of 191 acres planted for flue curing and decreases of six growers and 25 acres planted for air curing. This latter was due to the announcement of a lower requirement by manufacturers. The totals were thus 112 growers with 767 acres for flue curing and 8 growers with 45 acres for air curing. These acreages are calculated from growers' estimates and are probably somewhat in excess of those actually planted. The varieties most favoured were Yellow Pryor, Warne, Hickory Pryor, and Ashford Kelly, the first three occupying easily 75 per cent. of the total. Other varieties grown were Long Leaf Gooch, Conqueror, Goldleaf, Maryland Mammoth, and a few plants of Gold Dollar, Jamaica, Bonanza, and Dunbur.

The Ashford Kelly variety attracted attention during growth and was found to cure a nice bright colour, but the weight per acre was less than expected. Growers express the opinion that Warne, Yellow Pryor, and Hickory Pryor will be found superior in average years. Little satisfaction was expressed regarding other varieties with the exception of Maryland Mammoth. This variety was introduced for trial on the more fertile soils where it has produced well when supplied with sufficient soil moisture. A larger acreage in the coming year is calculated to more accurately determine its value.

Experimental.—The experiments designed with various fertilizer mixtures were void of comparative result, because of lack of cultural attention by the growers. The opinion is advanced after many years of experience that experiments of this nature with individual growers will seldom be worth while. Apart from cultural attention, the necessity for keeping small lots of leaf distinct during harvest, curing, in bulk, and later when grading, will be found to deter reliable growers from this undertaking.

The total of flue-cured leaf sold during the previous year is estimated as around 420,000 lb. From auctioneers' sale catalogues and returns of local sales made available 415,017 lb. realised £39,282 14s. 2d., which shows an average of 22·74d. per lb. Particulars of sundry lots passed at auction and subsequently sold and of a quantity sold locally were not available.

Sales of sun and air-cured leaf accounted for were 63,163 lb. for £3,416 18s. 8d., which shows an average of 12·98d. per lb.

Sales of leaf from the current season's crop have been very satisfactory to growers. The top price realised was 45d. per lb., while most growers have obtained 40d. and over for their first grade. One grower's returns show an average of 34·5d. per lb. The greater part of the crop will be sold at early forthcoming auctions. It is predicted that the average return will be about 24d. per lb., and that the amount sold will be in the vicinity of 650,000 lb.

INSECT PESTS.

Concerted action by wheat growers early in the year against a grasshopper plague obtained a satisfactory measure of control. Many millions of these insects were destroyed by poison before they had opportunity to lay any eggs. There would thus be fewer egg beds and a greater opportunity for the natural parasites to control the pest. Farmers are now alive to the necessity of co-operating in control and will be alert to note the appearance of swarms of newly emerged hoppers. Other than the grasshopper plague and the instances of wingless grasshopper and stem borer in tobacco, insect damage was perhaps less than usual.

PLANT DISEASES.

The chief trouble was rust in wheat which was greater than for some years past. Some cereal smut was in evidence here and there, but the damage occasioned therefrom was on the whole insignificant. Other fungoid troubles were of negligible importance.

N. A. R. POLLOCK,
Senior Instructor in Agriculture.

ROMA DISTRICT.

SEASONAL CONDITIONS.

Owing to the erratic nature of rainfall and the intense heat waves experienced through the summer months, the season prior to the May, 1938, floods was unfavourable both to agricultural and pastoral pursuits.

Although light rains in July permitted the completion of wheat planting in most instances, the winter generally was dry and extremely cold. The Western Downs district was favoured by early spring storms, but little rain of value was received in the Maranoa until late in January. The summer months proved the hottest on record, and from November up to late March extended heat waves were frequent, and did much to offset the value of the light rains received.

With the exception of areas such as Injune and South Wallumbilla districts, where storm rains had been fairly good, all parts of the district presented a drought-stricken appearance by March. The customary general rain failed to eventuate, and with the exception of scattered showers east of Roma conditions remained dry until the middle of May when general rain set in and all parts of the district received soaking falls up to 10 inches, this was followed by showery weather throughout June. Mild weather prevailing at present gives promise of an excellent winter.

PASTORAL CONDITIONS.

The flood rains of March, 1937, influenced a heavy pasture growth which was sufficient to maintain stock in good condition through the winter. The cold winter followed by a dry spring checked herbage growth, and the spring months were a period of anxiety, particularly where ewes were lambing, the lack of herbage and green shoot in the pastures resulting in heavy losses where no fodder crops were available.

The summer months opened favourably on the Western Downs, and in the Injune districts, but south of Roma many stock owners had commenced scrubcutting by November. The erratic nature of storm rains caused corresponding variation in pasture quality, but generally speaking grazing conditions up to May were far from satisfactory, severe heat waves following storms burnt up the grass shoot and growth was short-lived.

Southern areas towards St. George were most seriously affected by the drought, and in autumn all available country in the Maranoa was being taken up for agistment. There was, therefore, every likelihood of a serious shortage of feed by winter, but the general rains of May, followed by unseasonal warm weather and further showers in June, allowed sufficient growth in native grasses to keep stock, particularly sheep, in fair condition until the development of herbage.

Pasture Improvement.

Pasture Improvement Extension plots established during the 1936-37 season are definitely showing the superiority of light sandy or friable scrub soils for the introduced species. Blue Panic, *Panicum marikarikensis*, *Cenchrus ciliaris*, and *Digitaria valida* and *eriantha* have given good results in the light sandy soil types, whilst in addition to these Rhodes grass and *Cynodon plectostachyum* have done well in the better types of scrub soil. Blue Panic and *P. marikarikensis* have shown outstanding drought and light frost resistance.

Further tests in the direction of securing reliable information as regards palatability, powers of recovery after grazing, and longevity are proposed next season.

Of particular interest are the efforts of isolated settlers in connection with the establishment of lucerne for grazing. In the eastern portion of the scrub belt appearances indicate that this crop will be an important feature of pasture improvement programmes. Seasonal conditions over the past two years have been distinctly unfavourable for lucerne culture, but a gratifying degree of success has been attained in the Drillham, Columboola, and Guluguba districts. The restriction of sowing rates to a maximum of 4 lb. per acre and the adequate renovations of stands with tyne implements are two essential factors which have not been given sufficient attention in the past, and as their influence on yields becomes more widely recognised it is probable that there will be further extensions of area.

Wheat.

The 1937 wheat season, which commenced with great promise, proved disappointing. The normal planting rains of May and June were very light, and in some instances at Wallumbilla and Mount Abundance failed to yield sufficient moisture to enable planting to be carried out. The germinations, therefore, from late sowings were frequently patchy, and the absence of further rain influenced a large proportion of dry tip in many crops and consequent low yields. Many crops on insufficiently fallowed land failed to reach maturity. The position was relieved by the excellent early sown crops. Good planting rains early in April, subsequent to the floods of March, were received in some parts of Wallumbilla and Roma, and prompted many growers to commence planting at least a portion of their land, and these crops withstood the dry winter conditions very well; where land had been well prepared prior to March excellent yields were obtained.

In recent years, power farming has developed considerably in the Maranoa, and there has been a rapid increase in the number of tractors used. This has, of course, given much greater opportunity for the efficient fallowing of paddocks, and has enabled farmers to handle much larger areas effectively. A record acreage was prepared for the 1938 crop, and although sub-moisture reserves were much lighter than usual owing to the unfavourable summer conditions, the May and June rains have proved plentiful enough to overcome this, and prospects for this season's crop are relatively bright.

In order to serve the widening interests in the Wallumbilla district, an observation block of standard varieties and Roma crossbred wheats has been established there.

Fodder Crops.

In this district, where live stock are the most important means of getting a living from the land, the value of fodder crops as a means of supplementing pastures and conserving fodder cannot be too forcibly stressed. There is ample land at present unexploited in the reclaimed prickly-pear belt which is well suited to the cultivation of both winter and summer crops, and the further development of this area is intimately bound up with the most effective use of the area available. It is unfortunate that seasonal conditions during the past twelve months have militated against cropping and failures, particularly where pioneer methods of cultivation had to be adopted, were common. Such failures, however, have emphasised both the need for conserving fodder as hay or silage during flush seasons and the efficient methods of fallowing required under the seasonal conditions obtaining.

In order to assist in the development of systematic cropping programmes, a winter fodder plot has been established in the Taroom district. Quarter-acre blocks of the following have been sown:—

Wheat: Ford, Novo, Warput.
Oats: Sunrise, Mulga, Algerian.
Barley: Skinless.

The establishment of a summer series on the same property is proposed next spring.

Sudan Grass.

With few exceptions crops were well below average. Early sowings were mostly spoilt by heat waves occurring when soil moisture had been depleted by semi-mature growth, and later crops in January, which gave more promise, were very much reduced in yield by the dry conditions of February and March.

Plots arranged under the Pure Ceed Certification Scheme were as follows:—

Wallan Creek, 5 acres; Hodgson, 5 acres; Mount Abundance, 5 acres.

Plots at Wallan Creek and Hodgson failed to produce sufficient grain to warrant harvesting. The block at Mount Abundance gave better promise, but early frosts at flowering time and a concentration of bird life on the crop reduced the yield considerably. It is hoped, however, to secure sufficient seed to replant the plots next season.

Further work with the strains selected by Mr. Soutter, Senior Research Officer, carried out at the State Farm Reservation, gave interesting results. This type is of medium height, very fine stemmed, and very heavy stooling; it proved to be of similar drought and heat resistance as the commercial variety. The elimination of coarse stems would do much to overcome the deficiencies of the commercial type of Sudan commonly grown in this district for hay. A small quantity of pure seed for further extension work has been secured.

GRAIN SORGHUMS.

The past season has been excellent for demonstrating the comparative powers of this crop and corn as regards drought and heat resistance. No corn planted in the district yielded a grain crop, and in some cases even the green growth was totally destroyed by the heat. Small areas of grain sorghum established in the Wallumbilla and Jackson districts gave fair results, and were utilised for stock feeding in the green state owing to shortage of fodder through the drought. Brown Yolo at Drillham and Feterita and Standard Milo at Guluguba yielded grain crops. The keen interest taken in these crops, and the experimental work conducted in the district points to the increase in popularity of these sorghums, which it is hoped will fill the need for a summer grain crop for general farm purposes.

Experimental work included observation blocks of standard varieties at the State Farm Reservation and at Dulacca, and a trial of twenty-three new varieties introduced from America at the State Farm Reservation. Detailed reports of these have been submitted in quarterly reports January to March and April to June.

WINTERSOME SORGHUM.

A small block of this new introduction from Cape Colony was established at Roma. Essentially a feed sorghum, it is a vigorous grower, very coarse stemmed, and up to 9 feet high. A small quantity of seed has been secured for further trials.

COWPEAS.

Yield trials were established at the following centres: —

South Roma, Bogandilla, Eumina, Drillham.

The following varieties being used:—

Black
Brabbham
Groit
Poona
C.B.W. x Poona
Snake x Poona.

Fair early growth was made in all cases, but the heat waves later checked plants and only at South Roma were weights recorded. An observation block of the crossbred varieties established by Mr. Soutter, Senior Research Officer, was conducted at the State Farm Reservation from which further seed has been secured for extensional work. Results of these tests have been recorded in quarterly reports January to March and April to June.

COTTON.

With the exception of isolated areas in the Injune-Gunnewin, Wallumbilla, and Dulacca districts, the main cotton-growing centre is at present confined to the Guluguba-Wandoan district. Owing to drought conditions yields were low, although quite satisfactory results under the circumstances were secured from scrub burns. There appears to be ample scope for the extension of this method of growing cotton.

SWEET POTATOES.

Work during the current season was confined to the varieties—Director, Farmer's Special, and Porto Rico. The latter variety did not stand up to the heat, but the first two named gave satisfactory results.

Material is now on hand which will enable trials to be extended to the following varieties in addition to those already named:—New Jersey, Hawaiian, Nancy Hall, Pierson, Vineless, Quaker, White Yam, Yellow Jersey.

1. GRASS PLOTS AT STATE FARM RESERVATION, ROMA.

The seed harvested from the plots—viz., 20 lb. Blue Panic, 1 lb. *Panicum makarikariensis*—was forwarded to the Seeds Branch for germination tests with the following results:—

Blue Panic, 89 per cent. in 18 days.

P. makarikariensis, 65 per cent in 18 days.

Gaps in the row of *Cenchrus ciliaris* were filled by seed planted in March, 1938. This germinated readily, and young plants were firmly established by May.

Dairy cattle numbering 35 were grazed on the grass and cowpea plots from the 13th to 17th June. The condition of the grasses was not normal for this time of the year. The heavy May rain followed by mild conditions influenced a strong growth in all species, particularly *Cynodon plectostachyum,* Blue Panic (cut back in April) and *P. makarikariensis.* A very marked concentration on *C. plectostachyum* was noted when cows were first turned in, and this grass was eaten right down within a few hours. Order of preference in other grasses was roughly—(2) *Panicum makarikiensis,* (3) Blue Panic, (4) *Digitaria eriantha,* (5) *Digitaria* *polevansii*, (6) *Cenchrus .ciliaris*, (7) other *digitaria* species, (8) Rhodes Grass.

The cowpeas in a semi-hay condition were readily eaten.

2. Grain Sorghum Trials.

Locality.—State Farm Reservation, Roma. Trials with sorghums introduced from America.

Objects.—Observation. Pure seed for further trials.

Details.—Soil, light sandy. Planted, 4th January, 1938. Rows, ½ chain in length 2 feet apart.

Results.—The following observations were noted. Pure seed of all varieties with exceptions indicated was retained for further trials.

GRAIN SORGHUMS (AMERICA).

Name.	Germination.	Stalks to Plant.	Height.		Circum. of Stalk at Head.		Length of Head.	Width.	Type.	Colour of Grain.	Size of Grain.	Nature of Grain on Head.	Stain (Foliage).	Days of Heading.	Remarks.
	%		Ft.	in.	Ft.	in.	In.	In.							
Ajax	50	2	3	0	1	6	8	3	Tping.	White	Med.	Loose	Clean	90	Heavy yield.
Atlas	10	1	3	3	1	1	4	1·5	Club	..	No grain	..	Clean	76	
Beaver	80	4	2	6	1	9	6	3	Club	Yellow	Med.	Loose	Stnd.	58	Heavy yield.
C. W. Durra.. ..	60	3	4	3	2	1	7	4	Long. block tip.	White	Med.	Loose open	Med. stnd.	63	Stem inclined to lodge.
Chiltex	90	3	3	3	1	4	7	3½	Long. block tip	White	Med.	Med. close	Clean	58	Good type.
Chx. x. Hegari ..	100	3	3	3	1	3	6	2½	Long. block tip	White	Med.	Med. close	Clean	71	Good type.
Colman	30	1	4	3	1	4	4	2	Tping.	Red	Small	Loose	Clean	78	
Darso	80	1	3	0	1	5	9	3	Tping.	White	Med.	Loose	Clean	98	
D. Ashburn	80	4	4	9	0	1	6	1½	Tping.	Pink	Small	Loose	Clean	94	
E. Sumac	60	2	3	9	0	1	6	2	Tping.	Red	Small	Close	Clean	75	
Feterita	90	3	3	6	1	2	6	2½	Tping.	White	Large	Loose	Clean	55	Good type.
F. x. Kaf. x. F. ..	80	3	2	6	1	3	7	3	Round	White	Large	Loose	Clean	70	Good type.
Leoti	40	3	4	0	0	8	8	1½	Lg. cyl.	Red	Small	Loose	Clean	85	Light yield, but good type for harvesting.
Manko	50	1	4	3	1	7	10	3½	Tping.	Pink	Large	Close	Clean	76	
Milo x. Heg... ..	80	5	3	6	1	1	6	2½	Tping.	Red	Med.	Loose	Stnd.	58	Good type.
P. Kaffir	50	2	3	6	0	1	11	1½	Cyl.	White	Small	Med. L.	Very stnd.	70	
Quadroon	50	5	3	0	0	1	5	1½	Cyl.	Red	Small	Close	Very stnd.	63	
R. Kaffir	40	4	4	0	0	8	8	1½	Cyl.	Pink	Small	Loose	Stnd.	70	
Reed Kaffir			4	9	1	1	8	2	Tping.	Bl. and W.	Large	Loose	Clean	74	
Schrock	90	3	4	9	0	1	8	3	Cyl.	Brown	Large	Loose	Clean	76	
60D Milo	80	4	2	9	1	2	5	2	Club	Pink	Med.	Close	Stnd.	55	Inclined to goose necks.
Sumac	20	3	4	9	0	9	4	2	Club	Brown	Small	Close	Clean	79	
Tb. Kaffir	80	2	4	3	1	2	11	2	Cyl.	White	Med.	Close	Clean	88	
Sudan Grass.. ..	50	15 to 20	6	0	..		..	..	Rather	coarse s	temmed,	vigorous	growing	type.	

3. Sudan Grass, State Farm Reservation, Roma.

The Sudan grass selections cut back, as advised in my last report, made fair growth, but because of light, early frosts pollination of seed was checked.

Approximately a quarter of an ounce of pure selfed lemon-coloured seed, and 4 oz. of black seed were obtained.

4. Cowpea Demonstration and Yield Trials.

Details of plots:—

Eumina.

Soil.—Deep sandy. (Gum, ironbark, and box country.)

Preparation.—Ploughed, July, 1937. Harrowed.

Sown.—1st November, 1937.

Germination.—Good, but plants burnt off, resulting in patchy growth.

Drillham.

Soil.—Deep self-mulching. (Brigalow and belah country.)

Preparation.—Ploughed, June, 1937. Cultivated.

Sown.—20th November, 1937.

Germination.—Good.

Cultivated.—2nd December, 1937.

N.B.—Owner sold out; plot grazed.

Bogandilla.

Soil.—Medium heavy loam. (Myall and box country.)

Preparation.—Ploughed, June, 1937. Disced, August, 1937. Harrowed.

Sown.—26th October, 1937.

Germination.—Good.

Cultivated.—1st December, 1937.

Early growth was satisfactory, but was later checked by heat waves and plot was grazed.

South Roma.

Soil.—Light sand loam. (Pine and box country.)

Preparation.—Ploughed, July, 1937. Cultivated, September, 1937. Harrowed.

Sown.—14th December, 1937.

Germination.—Good.

Cultivated.—18th January, 1938; 9th March, 1938.

Weights.—13th May, 1938, as follows.

Weight of 1 chain in row:—

	lb.
Black	14
Brabbham	45
Groit	40
Poona	33
R. Imbil Sel. . ..	43
Turiana	24
N. Era x Poona ..	32
Snake x Poona ..	38

OBSERVATION AND SELECTION BLOCK, STATE FARM RESERVATION, ROMA.

Observations recorded on crossbred cowpeas were as follows. Seed of all varieties has been harvested for further trials:—

CROSSBRED COWPEAS.

Name.	Habit.	Vines.	Foliage.	Maximum Width.	Maximum Height.		Days to Flowering.	Seeding.	Size of Pod.	Evenness of Ripening	Resist. to Nematode.	Remarks.
				Ft.	Ft.	in.			In.			
Poona (Check)	Upright	Fine	Small dense	6	2	6	110	Heavy	3	Uneven	r.	
Reeves Imb. Sel.	Spreading	Med.	Med. dense	15	2	6	105	Med.	5	Even	r.	Strong growth.
Turiana	Spreading	Med.	Large sparse	10	2	0	115	Light	5	Even	Very susc.	
Sn. x. Poona	Spreading	Med.	Small dense	15	2	6	108	Heavy	8 to 10	Even	r.	
C.B.W. x. Poona	Upright	Fine	Small dense	10	5	0	130	Heavy	4	Even	r.	Very strong growth.
N. Era x. Poona	Spreading	Med.	Small dense	12	2	3	50	Very heavy	3	Even	r.	
Sk. x. Mammoth	Spreading	Coarse	Large sparse	17	1	6	52	Light	7	Uneven	?	
L.W. x. Skb. x. Poona 3501 ..	Upright	Fine	Small dense	10	4	0	102	Heavy	5	Even	r.	
L.W. x. Skb. Sel.	Spreading	Med.	Large med. dense	12	2	0	75	Med.	4	Uneven	r.	
L.W. x. Skb. x. Mammoth 3509..	Spreading	Med.	Large sparse	6	1	6	80	Light	6	Uneven	r.	
N.E. x. P. x. Mammoth 3510 ..	Spreading	Coarse	Large sparse	15	1	0	52	Med.	6	Uneven	r.	
C.B.W. x. Sn. x. P. 3511.. ..	Upright	Fine	Small dense	6	3	0	50	Heavy	5	Even	r.	
Sn. x. P. x. C.B.W. 3514.. ..	Med. spreading	Fine	Small dense	8	1	6	50	Heavy	4	Even	r.	
Sn. x. P. x. C.B.W. 3515.. ..	Spreading	Fine	Small dense	15	1	6	85	Heavy	5	Even	r.	
(P. x. M.) x (S. x. P.) 3516 ..	Semi. spreading	Med.	Small dense	10	2	6	75	Heavy	5	Even	r.	Appears to be variation.
Sn. x. Poona 3513	Spreading	Fine	Med. dense	14	2	3	85	Light	12 appr.	Uneven	r.	
Poona Type 3517	Upright	Med. fine	Med. dense	5	3	6	80	Heavy	2½	Uneven	r.	
L.W. x. Sn. x. Poona 3518 ..	Upright	Fine	Small dense	6	4	0	102	Heavy	5	Even	r.	

5. WINTERSOME SORGHUM.

The Wintersome sorghum proved a very strong growing variety. At the time of the last inspection of the plot at South Roma in May, plants were approximately 6 feet 6 inches in height, but had not come out into head.

In a ½-chain row established at the State Farm Reservation on sandy soil, there were approximately four to six stalks per plant, the highest 9 feet high. One pound of selfed seed has been secured.

6. SWEET POTATOES.

The under-listed varieties of sweet potatoes have been received from St. Lucia Training Farm for trial:—Director, New Jersey, Hawaiian, Nancy Hall, Pierson, Vineless, Quaker, Farmer's Special, White Yam, Yellow Jersey, Porto Rico.

C. H. DEFRIES,

Instructor in Agriculture.

CENTRAL DIVISION.

Seasonal Conditions.

The first six months of the Departmental year were extremely dry, and during the summer months were very hot, with only scattered falls of rain, until a series of thunderstorms commenced in the month of January, 1938. This only gave temporary relief, as dry and hot conditions again followed, leaving the crops dry and parched until general rain set in during the month of April, with further falls in May and June. The year has ended with the best winter rains for years over the whole of the agricultural areas in the Central District.

PASTORAL.

The year just terminated has been a trying one for the pastoralist in most parts of the Central district. On the coastal areas drought conditions existed with some exceptions until May, when many thousands of cattle had been shifted to agistment country. The loss of stock, due to the dry weather, was not considered heavy, as sufficient agistment country was available to those in need of it. In securing agistment country the Stock Department assisted considerably by announcements over the wireless asking those with available country to advise the Department, which information was passed on to those concerned. Good feed and water is now assured in the coastal belt. In the western portion of the Central district the season was reversed to that on the coastal areas, as scattered storms provided this area with a good body of grass until the end of January, which maintained the cattle in first class condition. Since that date, due to lack of rain, large areas of the Central West are in urgent need of rain, and relief country is in demand. During the month of February an outbreak of grasshoppers occurred in the Barcaldine district and a considerable area of grass country was destroyed.

DAIRYING.

The first eight months of the period under review were very lean ones for most of the dairy farmers in the Central district. While portions of the district received relief from scattered thunderstorms during the summer months other parts remained dry. Most of the dairymen in the Wowan centre shifted their stock to the Banana and Biloela centres, where they carried on dairying under temporary conditions until the winter rains in May, when they were able to return to their own holdings.

Crop Conditions.

MAIZE.

Outside small areas grown under irrigation the maize crop was a total failure, and in most cases this crop was fed to stock before reaching maturity.

POTATOES.

Owing to the dry conditions existing during the planting season the area placed under this crop was negligible. One merchant advised me that there was no demand for seed potatoes at all.

PEANUTS.

The area placed under this crop was approximately 2,000 acres. Owing to erratic weather conditions the quality of the nuts and the yield will be below that of previous years. At the time of writing this report the crop is being harvested, and it is too early to give a reliable estimate of the return.

GRAIN SORGHUMS.

The cultivation of this crop in the district is gradually increasing. This development has stimulated the introduction of new varieties and trials on farms scattered over the whole district. In spite of the hard weather conditions some very good crops of the varieties Kalo, Hegari, and American Early Red were obtained. Parrots proved very destructive to some crops, especially on small areas, where very little grain was left for the farmers.

SUMMER AND WINTER GREEN FEEDS.

Practically all summer green crops failed. Where a strike was obtained the small shoot was grazed down by dairy stock. These and further areas cultivated have been planted with winter crops, and the recent beneficial rains have assured sufficient fodder for many months to come. Unfortunately, some farmers have not taken the opportunity that nature has offered to store fodder for the next dry period.

CONSERVATION OF FODDER.

While some farmers in the coastal district make ample provision for dry times, and were not seriously perturbed by the recent dry spell, the greatest majority still neglect this part of their business. Every effort is being made to encourage farmers to grow fodder crops, and in this connection demonstration plots have been arranged in different parts of the district. In the western portion of the district an enterprising grazier has 20 acres under cultivation. With bore water irrigation fodder, hay, and ensilage crops mainly are grown for stud stock. On this property a 100-ton trench silo was opened and very little waste was revealed. An extension of advisory services to suitably watered areas will, no doubt, be of great benefit to stud stock breeders.

WHEAT.

The wheat areas in the Central district, which comprise the Callide and Dawson Valleys, showed a poor return for the 1937 season, which was due mainly to the light winter rainfall, which can be usually expected in June in these areas. Better results would, no doubt, have been obtained had more farmers fallowed for longer periods. It is still quite a common custom with numerous growers to plough land only a month or two before the planting period.

The improvement in cultural methods in this area must eventually increase the return per acre. The present season has commenced with splendid prospects for a first class crop, as beneficial rains have fallen over the whole of the Central district wheat belt. The area planted is approximately 5,000 acres in the two valleys, and, although individual plantings have increased, the total acreage under crop is much the same as last season.

TOBACCO.

Tobacco growing in the Central district is confined to Miriam Vale and Bundaberg districts, where there are fifty-two registered growers on thirty-six farms, with an area of 300 acres under crop for the 1937-1938 season. The industry in the Central district is showing steady progress, as, during the 1937-38 season, 300 acres were placed under crop from which approximately 130,000 lb. of cured leaf was harvested, as against 145 acres planted during the 1936-37 season. The industry is gradually extending south from Miriam Vale towards Bundaberg, and during the coming season isolated patches of tobacco will be planted over most of this area. In the Bundaberg district small cane growers are cultivating tobacco as a sideline. Their success during the past season is likely to induce other farmers to add tobacco to their cropping programme.

Seasonal conditions affected last season's crop considerably. During the growing period short dry spells were experienced, which caused uneven ripening, and consequently much inferior leaf was harvested. Heavy soaking rains fell during March, but were too late to be of much benefit to the late planted crops. In a few instances, where the ground tended to become waterlogged, cercospera leaf spot caused damage to the leaf.

EXPERIMENTAL WORK AND SEED SELECTION PLOTS.

GRASS VARIETIES.

A subsidised grass variety trial was continued during an exceptionally dry period. The varieties that showed the greatest drought resistance were *Cynodon plectostachyum*, *Panicum coloratum*, *Panicum maximum* (Fine Stem Guinea grass). The other varieties in the plot remained dormant throughout the dry summer months. Small lots of rootlets from most of the varieties in the plot were distributed to farmers and graziers. Single chain rows of each of the varieties under trial were planted where it is intended to extend the area next season to test the varieties under ordinary grazing conditions.

SORGHUM SEED SELECTION PLOTS.

Two of these plots, each of half an acre, were established, under irrigation, at Pink Lily and Frenchville. Before the planting of these plots, two plantings were made under ordinary weather conditions, but because of faulty germination resulting from continued dry weather, it was finally decided to grow the crop by irrigation. Three rows of each variety were planted and the seed head of the centre row was hooded before flowering, for use as pure seed. Although planted late in the season, all varieties have yielded well and a plentiful supply of pure seed for use on propagation plots is assured. The varieties planted were—Western Black Hull Kaffir, Pot Dawn, Dawn, Kalo, Aclamoi, Farmer's Red Kaffir Corn, American Early Red, Black Hull C171, Kandhar, Brown Yolo, Wheatland Milo, Standard Milo, Giza 4, Redfort Hyte, Atlas, Kalo 302, Reed, Dwarf Pink, Hegari, Pietersberg White, Day Milo, Sharon, and Natal 6. The varieties showing the most promise as far as yield, size of grain and heads is concerned, were Pietersberg White, Natal 6, Reed, and Dawn.

SACCHARINE SORGHUMS.

Included in the abovementioned seed selection plots were the Italian and Honey sorgho varieties, which are very popular in the Central District as fodder sorghums.

GRAIN SORGHUM PROPAGATION PLOTS.

Sufficient seed to plant half an acre was supplied to farms in different parts of the district to foster the growing of grain sorghums.

Of the saccharine sorghums, two propagation plots were planted, each half an acre.

TOBACCO SELECTION PLOT.

An area of one-quarter of an acre was selected at Parkhurst, with the object of obtaining pure seed for departmental seed stocks. The varieties planted were Cash, Bonanza, Gold Dollar, Warne, and Kelly. Because of the continued dry weather during the growing period, the tobacco had to be continuously irrigated. The flower heads were carefully hooded and selections made only from the most typical plants of each variety. Sufficient seed was obtained for planting next season.

TOBACCO SEED PROPAGATION PLOTS.

Four plots were established, each on an area of one-sixteenth acre. The varieties planted were:—Cash, Yellow Pryor, and Kelly. Plants for these plots were obtained from departmental seed-beds in Rockhampton. The plants produced were well grown and free from disease. All plots had to be continuously irrigated, and a good supply of seed was obtained from each, with the exception of the Kelly variety at The Caves, which was almost a total failure because of heavy attack by stem borers (*Phthorimoea heliopa*). Continued dusting with arsenate of lead failed to check this pest.

COW CANE VARIETY TRIAL.

Two plots, each of ¼ acre, were planted. The varieties were:—Florida Oshima, China x Java, and Improved 90 Stalk. Sets were obtained from the Bureau of Tropical Agriculture at South Johnstone. A good strike was obtained in all varieties and to date the China x Java and Florida Oshima have made much better growth than the Improved 90 Stalk, which, however, is stooling much better than the other two.

WINTER FODDER DEMONSTRATION PLOTS.

To encourage farmers to grow fodder for their stock, 1-acre plots, divided into six equal parts, were established at Wowan, Biloela, The Caves, Nagoorin, and Ambrose. The varieties planted were:—Florence wheat and Dunn field peas, Cape barley, Skinless barley, Algerian oats, Sunrise oats, and Belah oats. The weather and soil conditions could not have been better in respect of every plot planted, and good results are anticipated.

PIG FEED DEMONSTRATION PLOTS.

The area of each plot was 1 acre, divided into eight equal parts. Plots were established at Biloela, Wowan, The Caves, Boyne Valley, and Mount Larcom. The varieties planted were rape, mammoth Swede turnip, field carrot, purple top Aberdeen turnip, long red mangel, yellow globe mangel, sugar beet, silver beet. A good strike was obtained in most of the plots, with the exception of that at Wowan, where the germination was poor. This plot has again been planted under much better conditions.

WHEAT VARIETY TRIALS.

In the Callide and Dawson Valleys, 12 wheat variety trials have been established, six in each valley. The soils selected for these trials are sandy alluvial, heavy black, clay loam, and red sandy loam, which are representative of the wheat-growing soils. The area of each plot is 1¼ acre, and the trials include five varieties, each of ¼ acre. The varieties under trial are:—Pusa x CCC, CCC, Sea Spray, Pusa, Florence. Arrangements also were made to plant a plot on black soil at Biloela, but because of heavy rain, the planting had to be postponed. The plots planted in the Dawson Valley localities were on different types of soil which had been fallowed from five to eight months. The conditions at the time of planting have probably not been better in these areas for many years, for from 4 to 6 inches of rain had fallen over the whole district about a fortnight before planting, while the periods between rainfalls were long enough to allow of harrowing. Immediately after planting good rains again fell.

TOBACCO.

Tobacco seed beds were planted in October and November, and the plants were discarded in December as too old for planting, as there was insufficient water in the Alice River for irrigation. Further seed beds were again planted in January, and field planting made in February and March. Approximately 2 acres were finally planted with the varieties Cash, Gold Dollar, and Kelly.

Fertilizer was used in the field at the rate of 350 lb. of 4-12-6 per acre. This was the first crop grown on this land, and, from present indications, the rate per acre on first-year ground of this nature can be considerably reduced, as the leaf has grown too large with a tendency to coarseness.

At the present time there is some very nice leaf in the field, which is just commencing to ripen. It is planned to continue variety and fertilizer trials.

OTHER CROPS.

Plantings were made of White panicum, Japanese millet, Sudan grass, lucerne, cowpea (black), and Brown Yolo sorghum. These crops were grown mainly as demonstration plots, and also for horse feed.

When about 18 inches high the White panicum, Japanese millet, and lucerne were totally destroyed by grasshoppers. The Sudan grass grown to a height of approximately 7 feet was cut and chaffed. The Black cowpea grew an excellent crop, which was harvested as hay. An excellent crop of Brown Yolo grain sorghum was obtained. Considerable interest has been displayed by graziers and others in the crop of grain sorghum.

General Remarks.

Instructional visits were made to farms at Marlborough, The Caves, Boulercombe, Dalma Scrub, Stanwell, and various centres in the Callide and Dawson Valleys. A departmental exhibit—chiefly of tobacco, wheat, and grain sorghums—was displayed at the Rockhampton Agricultural Society's show in June.

O. L. HASSELL,
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MIRIAM VALE.

Seasonal conditions for the early part of the year were distinctly adverse. The soil was dry as a result of the lack of winter rains, and this greatly hampered ploughing and early cultural operations.

Seed-beds were generally large enough to provide a sufficiency of good plants for planting and replacing misses, but some growers did not provide a succession of sowings for late plantings. Rains in late November relieved the position, and most fields were rapidly planted during this month and December. Barely sufficient rains maintained plant growth until early January, when, because of heat and lack of rain, crops had already begun to wilt. No beneficial rains fell before late March, then too late to benefit crops generally. Late crops revived, but continued rains, accompanied by cold nights, lessened disease resistance and checked growth. Notwithstanding such unfavourable weather, the average yield was 490 to 500 lb. of cured leaf per acre. Many experienced growers obtained yields of 700 to 800 lb. per acre.

In the southern end of the district—Yandaran to Bundaberg—planting was later and January and February rains more frequent and generous. Areas are smaller and are consequently attended to more thoroughly. This fact, together with the more favourable weather influenced a better average yield—slightly in excess of 650 lb. of cured leaf per acre.

The total district yield of cured leaf is expected to reach 148,000 lb., prices for which are averaging between 21d. and 23d. Some growers have averaged 36d.

The variety Gold Dollar, which has given excellent results—heavy yields and leaf of high quality—comprises probably 90 per cent. of the crop now grown. The remaining 10 per cent. is planted with the variety Cash.

There has been a general tendency this season to include heavier soils than previously in cultivation of tobacco. Unfortunately, because of seasonal circumstances, most of these areas of richer soils were planted late, and, as with all crops planted late in the season, yielded only dark, low quality leaf. One area of very heavy soil, however, produced a high yield of bright leaf, which realised good average prices.

The poor quality, partly perished leaf harvested this year was very susceptible to bulk mould and, despite judicious conditioning of leaf, losses occurred. Home graded leaf is realising generally better average prices, and, where labour is available, growers, as in previous years, are grading their own leaf.

Pests and Diseases.—With the exception of bud worms, which were effectively kept under control, insect pests were not very troublesome. Some loss was caused by stem rot, but this was confined to fields planted with old plants from frequently pulled and aged beds. Frogeye made its appearance after cool weather, which was accompanied by continuous rains and consequent water-logging of the soil commenced. There have been no reports of blue mould in the district for the past two seasons. An increase in the acreage under crop is anticipated for the 1938-39 season, and it is expected that expansion will be greatest around Yandaran and along the Kolan River.

Good soaking rains have now restored the soil to its normal or above its normal moisture, promising better prospects for the coming season.

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Instructor in Agriculture.

NORTHERN DIVISION.

MACKAY DISTRICT.

Weather conditions for the first quarter of the term were exceptionally dry; only 172 points of rain were recorded. In the next quarter, October registrations were 52 points below, November 122 points above, and December 649 points below average. The aggregate for the calendar year (1937) was 5,260 points.

November rains gave the grass a start and relieved the stock feed position, but were not heavy enough to provide surface water. Generally, the year (since July, 1937) has been one of the driest on record.

Early in January soaking rains gave immediate general relief. These rains were followed by further light falls which had the effect of giving an impetus to pasture growth. Heavy falls in February exceeded the average over the whole of the Division and provided an abundant supply of surface water, causing creeks to run strongly. By the end of the month pastures in all districts were showing a flush growth of succulent feed. Heavy rains accompanied by cyclonic conditions brought the March total to nearly normal, and made the position secure for the winter over both arable and pastoral lands. April was phenomenally dry, the registration in many centres being the lowest on record. The precipitations in May and June were very beneficial and the general outlook at the close of the year was very satisfactory.

DAIRYING.

The year opened badly for dairy farmers. A welcome weather change was experienced in November producing a new shoot in the grass. The heavy summer rains ensured ample feed and water for the winter.

The Eungella, Rise and Shine, O'Connell River, Blue Mountain, and Bolingbroke districts are being developed rapidly. Dairy herds have increased, and settlers are interesting themselves in improvement of pastures, fodder conservation and the growing of other winter and summer crops.

PASTURE IMPROVEMENT.

Throughout the year extension work with the more promising grasses—including *Cynodon plectostachyum*, Purple Top Guinea (so called *Panicum coloratum*), *Urochloa pullulans*, and Fine Stem Guinea—has been carried out.

In the O'Connell River district *C. plectstachyum*, Purple Top Guinea and *U. pullulans* were established on newly burnt jungle lands in February, and are now thriving. *Panicum muticum* (Para grass) also is receiving close attention from dairy farmers and pastoralists.

POTATO VARIETY TRIALS.

An experiment plot of English potatoes was established in the O'Connell River district. The varieties selected for the trial were Carmens, Brownells, Scottish Triumph, Bismark, and Up-to-Date. The land selected was scrub, with soil of a deep alluvial type of medium dark loam, portion of which was virgin, while the balance had been under maize last season, followed by a crop of cowpeas. The cowpeas were ploughed under as a green manure early in March. The virgin land was broken up in January, and further workings at frequent intervals reduced the soil to a good tilth.

Planting was done on the 23rd April, and on the 11th May germination had commenced.

TOBACCO.

Conditions have been rather unfavourable for tobacco growing. Exceptionally high temperatures and a dry period succeeded the early summer rains, and great difficulty was experienced in getting the young plants established in the field. Because of these conditions and stem borer attack, many young plants died, necessitating extensive replanting. In January the losses caused by stem borer were exceptionally heavy. Fortunately, in the later-planted crops infestation abated considerably.

The heavy rains in February caused considerable damage to early-planted crops. Land became water-logged, with the result that the leaf ripened prematurely and curing commenced before the flowering stage was reached. The yield from these crops was light, although the quality of leaf was quite good and bright in colour. Where the land was badly drained, leaf was very poor in quality, and difficult to cure.

In the Sarina and Koumala districts very heavy rains caused failure of many tobacco crops, the leaf of which drooped and went black in the curing process. Leaf which had been harvested before the rains cured very well and realised as high as 42d. a lb.

The area cropped for early leaf this season is not as large as in the past two seasons, but a higher yield is anticipated. Some growers have refrained from planting early because of the poor results obtained in previous seasons. The March-April planting is the more favoured period.

Seedlings showed vigorous growth, and little or no trouble was experienced with disease or insect attack. "Damping-off" was in evidence in the seed-beds, but was not serious, while stem borer attack has lessened.

Dry weather in early March delayed planting. Later in the month, heavy rains occurred. Within ten days approximately 17 inches had fallen. Cyclonic winds damaged the partly harvested crops. April was very dry, consequently, tobacco planted out made slow progress. Much of the leaf since picked is of good quality, bright in colour, and good texture. May commenced with light rains. These and subsequent falls have been very beneficial to both the early and late-planted crops.

During the past two seasons most of the leaf has been the product of the March and April plantings. The main crop influencing factors are:—(1) A wet midsummer; (2) high temperatures which early in the season are inimical to the establishment of the plants in the field; (3) the prevalence of insect attack among early crops; (4) the absence of blue mould (this disease caused serious damage in the 1934 season, but since then has only made its appearance at the end of the season with no appreciable loss of leaf); (5) cold has no apparent detrimental effect on the growing crop, as the plants make good growth when temperatures are comparatively low, the leaf ripens normally, and presents no difficulty in curing. Last season, the late crop produced good-quality leaf which realised good values.

FIELD TRIALS.

Field trials included the following projects, details of which have been recorded:—

Split Application of Fertilizer S.T. 109 at Sarina.
Split Application of Fertilizers, K.T. 110—Koumala.
Winter Cereal Rotation (wheat, oats, rye, and canary seed)—Koumala and Sarina.
Variety Trial—Sarina.
Two-year Rotation Trial—Sarina.
Cultivation Trial—Koumala.

Other projects carried out in the course of the year included:—

Fodder Conservation and Stack Silage Demonstration.
Sorghum Trial—Sarina Range.
"Brazilian Lucerne" (*Stylosanthes Guyanensis*) Trial.
Dairy Winter Fodder Trials—Bolingbroke, Rise and Shine, and Mackay.
Onion Trials—Blue Mountain, Rise and Shine, Koumala, O'Connell River, and Eungella.
Summer-growing Fodder Trials—Bolingbroke.

Details of all these trials have been placed on record.

MAIZE.

Seasonal conditions prevailing in the Eungella, Sarina Range, and Blue Mountain districts were very favourable for the maize crop, which promises a much higher average than last season.

In view of the excellent results obtained during the past two seasons, there is a general tendency to increase the acreage each year. Many farmers are utilizing freshly burnt scrub land for this crop and sowing grass seed as well. After the harvesting of the maize crop these areas then become grazing land. Most of the maize growers are using varieties evolved by the Department of Agriculture and Stock, and these varieties are showing a big improvement in yield and quality of grain over the indifferent types planted formerly. Star Leaming and Fitzroy (Improved Yellow Dent) are the most favoured.

COTTON.

Small cotton experiment plots were established in the Koumala district for the purpose of obtaining data relative to the planting period and varieties suitable to the district. The varieties used were Miller and Ferguson. Planting was delayed until April because of the heavy summer rains. Germination was good, but the subsequent growth was very poor, and it is doubtful whether this crop will reach maturity.

COW CANE (CHINA X JAVA).

The results obtained from cow cane trials established in the several localities were very satisfactory in respect of growth and stooling.

COWPEA SEED PLOTS.

A cowpea seed propagation plot was established at Sarina, and comprised the underlisted varieties, of which 11 were crossbred and 3 standard varieties:—

Snake x Poona 3503
Snake x Poona Sel. 1.
Large White x Skewbald x Mammoth Sel. 1.
Large White x Skewbald x Mammoth 3509
Large White x Skewbald x Poona 3501.
Large White x Skewbald x Poona Sel. 1.
Large White x Skewbald x Poona Sel. 2.
Large White x Skewbald x Poona Sel. 3.
Large White x Skewbald Sel 1.
Large White x Skewbald Sel. 2.
New Era x Poona x Mammoth Sel. 1.
Clay.
Black.
Groit.

Germination was very irregular, and this, together with Bean Fly infestation, did not warrant the continuance of this plot.

C. S. CLYDESDALE,
Senior Instructor in Agriculture.

BOWEN DISTRICT.

In reality the district has enjoyed three favourable months out of the twelve since 1st July, 1937. From 20th February, 1938, to 25th March, 1938, a dry hot spell retarded materially the general progress of growing crops, especially tobacco. Since the end of March no beneficial rains have, over the major portion of the district, been experienced. Up to date the occurrence of frost has not been reported, not even in the coldest localities. The lack of rains over the past three months has accounted for a diminution in areas generally under crop at this time of the year, while crops of maize have not progressed satisfactorily.

From the pastoralists' viewpoint the season has been too short, and live stock, other than those from a few isolated and more fortunate areas, are not carrying the maximum of bloom or the prime condition looked for in first-quality fats.

TOBACCO.

The past year has shown an increase in the tendency to grow crops in the late spring or early autumn, and the time seems not far distant when growers whose object is to dodge the disadvantages of excessive heat, rain, and insect pest invasions will refrain from planting during the period, 1st December to 20th March. The best crops produced in this district are those planted out in mid-September or mid-March and irrigated judiciously.

An improvement is evident in the renovational work on old tobacco lands, and the worthwhile growers are giving their lands a chance by either green manuring with suitable crops or fallowing.

Excellent prices have been received for leaf disposed of to date, and there is reason to believe that tobacco as a remunerative crop will receive in the near future increased consideration.

EXPERIMENT WORK.

The problems, spot control, cultivation, and quantities of fertilizer have been tackled during the season with, I anticipate, only partial success. The true value of these undertakings will not be known until such time as all leaf ex trial blocks is sold and comparisons made. Up to the present it seems safe to say that the most promising of the leaf-spot control experiments, B.E. 84, was thrown out of balance by the excessive rains following the "topping" operation in March. According to weights taken of the leaf from this experiment, the primed section shows an appreciable increase over the not primed. On an acre basis the yield from both sections exceeds 1,200 lb., but, unfortunately, leaf spot is prevalent, and the quality of leaf is not good.

The quantities of fertilizer trial has suffered the same fate as its neighbour, and from observations taken it appears unwise to exceed the rate of, say, 400 lb. per acre on country such as this trial is on. Prior to the leaf in these latter plots thickening the respective rates of fertilizing were quite distinguishable in the field, but at all times the heaviest dressing, i.e., 725 lb. to the acre, was easy of detection, because of coarseness in the leaf produced. Acre yields from these treatments are also on the high side, and approximate 1,200 lb., but here again quality is lacking.

B.T. 102, the cultivation trial established at Jaraga, promises to furnish good returns, and though not yet completed some really good leaf is on hand from the respective plots in this block of 1 acre. Although this trial is in the same locality and within 2 miles of B.E. 84 and B.T. 104, through being planted later and on less fertile soil it has not been upset to the same extent, i.e., the leaf has not thickened, is fairly free from leaf-spotting, and is likely to realise a high average price.

Weights of leaf from B.T. 102 are not yet available, but it is safe to estimate the yield at a figure well in excess of that likely to be harvested from any other acre on the co-operator's farm.

The plough cultivation and rigid priming are two factors which definitely contributed in no small measure to the success of this crop, and I feel quite sure that limited areas subjected to plough cultivation would prove much more remunerative than extensive fields under the old method of scuffler tillage.

The trials in the Home Hill area, B.E. 85 and B.T. 103, did very poorly, and because of the prevalence of stem rot in the field and a general diminution in plant populations as a result the figures from these two experiments are not expected to convey information of value.

GENERAL CROPS AND PASTURE IMPROVEMENT.

Maize.—From the three lots (5 lb. each of I.Y.D., R.Y.D., and Funk's 90-day) the following results have so far been obtained:—

I. Y. Dent, 2½ lb., planted at S. Wallis, Euri Creek (failed to germinate); 2½ lb., planted at R. G. Darrins, Inkerman, a poor strike, but sufficient to retain seed if such action is warranted.

R. Y. Dent. Planted on D. Heron's farm, Mookara. Fair crop now approaching maturity. Examination of ears discloses lack of general uniformity.

Funk's 90 Day. Planted at J. Heron's, Don River. Patchy crop now tasselling; may furnish sufficient seed for further plantings.

Sorghums.—For fodder the saccaline type and for grain feterita continue to be grown, and supply quite adequately the requirements of growers.

Fodder Canes.—Climax Java and Indian. The fodder has given remarkably good yields, and is gaining favour throughout the district. It has been distributed widely to farmers at Collinsville, Mount Aberdeen, Jaraga, Bowen, Guthalungra, Inkerman, Home Hill, and Proserpine. Indian cane, grown here for many years, is being cast aside to make room for the variety first mentioned.

PASTURE IMPROVEMENT.

Although some ten varieties of introduced grasses did well in nursery plots, only three, after fairly wide distribution, have been favoured by farmers.

On the hillside of the scrublands adjacent to Proserpine African Star grass is quite at home and is supplying a dense body of feed to dairy stock.

At Euri Creek Strochlaa Pullulaus, from a few roots planted out, is spreading quite well, mainly from seed (self sown), and from observations taken stock favour it noticeably.

Fine Stem Guinea, which lends itself to cultivation, is being given a good trial at Mr. H. Vaughan's farm, Merinda. This grass has behaved sufficiently well to encourage the planting out of roots over an area of a couple of acres, and, given favourable growing conditions, should more than warrant the expense entailed in getting it established.

E. R. ASHBURN,
Instructor in Agriculture.

TOWNSVILLE DISTRICT.

The year generally has not been a good one. Practically no rain fell in March, a month which is usually noted for the heaviest falls. To make matters worse practically no rain has fallen since. In some areas such as the northern and western portions of this district better conditions have prevailed, and a plentiful supply of water and grass is available for stock. Irrigation plants have been used almost continuously in the Ayr and Woodstock areas. At Woodstock only a limited quantity of water is available in the sand in Major Creek. Sufficient, however, is available for irrigating the potato crops.

CROPS.

TOBACCO.

About 100 acres of tobacco were planted up in the area this season. In the early stages the leaf grew well and gave promise of yielding well, but, unfortunately, dry conditions caused the fully-grown leaf to languish and die. A great quantity of leaf cured out brown and lifeless.

Towards the close of the season, aided by a few scattered showers, the later-planted leaf has grown nicely, and in some cases is curing out very well. A particularly good crop of about 3 acres at Woodstock was grown on reasonably rich alluvial under irrigation. Although it is early to say just how the field will cure out, the first picking although light and papery gave every indication of very good curing results to follow. This is a particularly nice looking crop, and should yield about 12 cwt. per acre. In Woodstock the tobacco season is a very prolonged one, in some cases the later-planted leaf has not yet been picked. About 20 to 25 tons of leaf should be produced in the area. At Ingham about 8 acres are under tobacco.

SEED-BEDS.

A plentiful supply of good healthy seedlings were raised this season. Only two growers in the area sprayed regularly with colloidal copper spray. Good conditions were encountered in January and again in February for transplanting.

FIELD.

Good growing conditions prevailed in the early stages of the crop, but, unfortunately, a dry spell was encountered just before harvesting commenced. This had a very detrimental effect upon the crop, which rapidly commenced to break down. Probably owing to the very favourable conditions earlier the plants did not develop a very extensive root system, which, when severe conditions prevailed, was incapable of nourishing such a well-grown crop.

PESTS AND DISEASE.

No blue mould was encountered in the seed-beds. Only recently the first attack of field mould has been noticed. This did quite a deal of damage to young tobacco on one farm. Only one other slight attack has been recorded. A few beds showed slight attack of *cercospora* (leaf spot), which disease increased in the field as the season advanced. It never at any stage threatened to become serious. Mosaic is becoming more prevalent each year, and growers are well advised to take every precaution with this rapidly spreading disease.

Insect injury has been very slight. Just prior to early harvesting carterpillars showed signs of becoming troublesome. Early baiting, however, effectively held leaf-eating caterpillars in check.

Stem borer was troublesome early in the season, but at present has almost completely disappeared.

POTATOES.

Some 50 acres have been planted to potatoes in the Woodstock area, about the same acreage for Charters Towers-Pentland areas, and approximately the same for the Ingham district. Faulty germination was again evidenced, and in the early part of the season it was almost impossible to procure seed. Some crops are well on beyond flowering stage, and it is a noticeable feature that very few attempt to spray in the field, while beyond the experimental plot no seed was treated before planting. About 400 tons of potatoes should be harvested, although it is early to make an estimate of yield. In the North potatoes grow very rapidly, and in some seasons have a tendency to run too much to top. The tuber moth (leaf miner) is noticeable in some tobacco fields, and may be troublesome later on in the season when the potatoes are being lifted. One field was slightly attacked by blight, but spraying has apparently prevented the disease from spreading. For the most part the fields look healthy, and good returns are expected. The 150 acres are comprised mostly of the white varieties, as Brownells, the best sellers in the North, were difficult to obtain.

TOMATOES.

Dry conditions have prevented farmers from establishing larger areas of tomatoes. Only those favourably situated for water have been able to plant. About 30 acres have been established, and should come to maturity when the market is at its peak. A few acres of early tomatoes are yielding remarkably well considering very little rain has fallen during the period of their growth.

OTHER CROPS.

Very little attention is given to crops beyond the cultivation of sugar-cane and the crops already mentioned. Small areas of truck crops are sometimes attempted for the local market.

EXPERIMENTAL.

TOBACCO.

During the year several additional experiments were got under way, and are showing fair progress. A tobacco fertilizer trial was arranged and planted. Owing to excessively dry conditions the leaf began to die in the field before harvesting commenced. Under normal circumstances the yield should have been in the region of 600 lb. per acre of reasonably good leaf. The quality of the leaf has suffered, and in some cases leaf had to be harvested before it had properly ripened. The harvesting is about half finished at present.

POTATOES.

Two fertilizer trials were laid down in the Woodstock area. One has been above ground for about one month; the other is just showing signs of coming through at the present moment. Brownells were planted in the first instance, but the seed was backward and germination was slow. However, counts taken at frequent regular intervals reveal a steady increase in germination from week to week. Some tubers, however, having to remain too long in the wet ground, rotted away before growth took place. A stand has been obtained which will afford sufficient data for analysis. The other area appears to be germinating faster and more uniform than the first. This was planted with Carmens, and the seed was well forward.

LUCERNE.

Two trials at Ayr were arranged for, but one of these areas had to be abandoned, and was eventually located at Woodstock. The strike at

Ayr was poor owing to insufficient moisture at planting time. The stand at Woodstock, however, was excellent, and it has made rapid growth. Germination was noticed one and a-half days after planting, and the crop has been above ground three weeks and is several inches high. As soon as possible a cutting will be made and water supplied to all the plots.

Fodder Conservation.

Owing to the long dry period during the winter months dairy farmers in this area have to conserve large quantities of fodder to carry them through to the rainy season. Some twenty silos are in use in the area, and these have all been filled this season. The ensilage consists mainly of sorghum. Townsville lucerne (*Shylosanthes sundaica*) has been harvested extensively and put into stacks. This wonderful legume mixed with the natural grasses provided a really good quality bush hay, and is a wonderful standby during the dry period. About 1,000 tons have been stored as ensilage and 500 tons as bush hay.

One dairy farmer has planted 2 acres of lucerne, and is using an overhead spray system (Noonan) for irrigating. The first cutting was made six weeks after planting, and the crop is growing rapidly, and should be ready for its first commercial cutting in about three weeks' time.

ANIMAL HEALTH STATION.

The area under cultivation at the Animal Health Station was increased this year, and sufficient sorghum was grown to almost fill the 100-ton silo.

A grass plot was established early this year, and the varieties planted at present appear to be doing well. It is intended that this plot be added to from time to time.

Marketing.

The marketing of agricultural produce in North Queensland is not satisfactory. Growers have great difficulty in disposing of their potato crop, as all the orders are placed in the South. Tomatoes last season rarely brought more than 4s. per case, while they were retailed at not less than 6d. per lb. and often a great deal higher. Brisbane is always a better market than the local one, and hence tomatoes grown locally are sold in the South and southern tomatoes are sold locally.

T. G. GRAHAM,
Instructor in Agriculture.

MAREEBA DISTRICT.

In no respect has the season under review been a favourable one; crops on the whole have been mediocre, and the total returns will almost certainly fall below those of the previous season. The most important contributory factor has been that of the unfavourable weather conditions experienced throughout the growing period of the main tobacco crop. Storms were encountered from the end of November to the end of January, and within this period the greater proportion of the crop, with the exception of the irrigation areas of Emerald Creek and the Barron River, was planted out in the field. The usual monsoonal rains were encountered towards the middle of February, and yielded about 13 inches within a week, with the result that there was a tendency towards water-logging of the soils. Coincident with, and subsequent to, this rainy period low temperatures were recorded and the soil remained cold for some time after the cessation of the rain. During this period crops remained at a standstill, and for a few weeks made but poor growth. It is probable that two factors were mainly responsible for this condition, firstly, the low temperatures following the rains, and secondly, the excessive leaching of readily available plant foods which must have taken place.

GENERAL CROP GROWTH.

The initial stands obtained in most areas were good; in particular this would apply to the Paddy's Green and Springs areas. Many of the crops in these areas were planted out during November, and were approaching maturity when the monsoonal rains occurred. The effect of these rains did not induce any appreciable "new growth" or in any way retard the process of ripening. In this area, in common with all others, crops planted out later resulted in more or less even stands, but the plants made poor growth, and small crops have been the result.

In the case of the irrigation areas of Emerald Creek and the Barron River, crops were planted out in the field from the end of August to the end of January. With few exceptions mediocre stands were obtained, but on the whole fair growth was maintained. Most of these crops suffered from inadequate cultivation and the effects of diseases and pests, with the result that the quality of the leaf has been considerably reduced.

DISEASES.

In the seed-beds "blue mould" has been successfully controlled in some parts of the district by regular spraying with colloidal copper, while in areas such as Emerald Creek it has proved quite ineffective. In these areas benzol vapour is used almost universally, and fair success has been obtained, though in some cases losses were sustained despite this treatment. It is considered that many of these failures could have been traced to faulty technique, and this explanation may also apply to the failure of sprays in the same area. In some cases too long a period is allowed to elapse between applications, while throughout there is a general tendency to employ benzol as a remedy after the disease has appeared rather than as a preventive measure to insure against outbreaks. There are a limited number of growers in the district who still neglect to apply any recognised control measure and who suffer in consequence.

In the Emerald Creek area "blue mould" made its appearance in the field when conditions favouring its development had been artificially created by the process of irrigation. In other parts of the district it did not appear in the field until the wet, cold period following the rains, and in most instances only minor damage resulted. Considering the district as a whole it is not considered that this disease was responsible for very great losses, and any outbreaks which did occur were limited in extent and in duration.

Of far greater economic importance to the crops of the district has been "frog-eye" leaf-spot, which first made its appearance immediately following the monsoonal rains, and plants in all stages of growth were affected. While the disease has occurred in all parts of the district year after year to a greater or a lesser extent, it has been most marked in the Emerald Creek area, and some growers would go so far as to claim that it is an uneconomic proposition to attempt any but a very early crop in this area. In substantiation of this statement it is claimed that weather conditions are primarily responsible. While there is little doubt but that these environmental factors are of importance it would appear that quite a number of others are also involved. In the first place there has apparently been considerable laxity on the part of most farmers in effecting the destruction of old tobacco stalks after harvesting, and, with the extended planting period in the irrigation areas, there remains a very short period of time during which there is no tobacco at some stage of growth in the field or in seed-beds, thus providing a favourable host for the disease organisms. In addition, farming methods in this area are most unhygienic and there is evidence of neglect in the matter of cultivation and priming. Since the advent of benzol treatment into common usage copper sprays have been practically abandoned, and, as the former is now known to be of little value in the control of "frog-eye," the seedlings have had little or no protection against this disease.

Mosaic continues to be in evidence throughout the district; in most cases the disease has been restricted to small numbers of plants in the field, but it appears to be increasing from year to year. In some instances its spread is so rapid that whole fields may become infected within a very short time after its first appearance in the crop. This contention has been amply borne out in one or two instances on Emerald Creek, where the growers concerned had become greatly alarmed. On account of the ease with which the infection may be spread tobacco mosaic is considered to be a potential danger to the industry. Prompt measures at this juncture should have the effect of preventing the attainment of serious proportions, but, unfortunately, most growers are content to take no action whatever.

This season there appeared, mainly in the Emerald Creek and Barron River areas, a form of stem rot, which has been responsible for considerable damage. In other parts of the district isolated plants were affected, and it is probable that the conditions prevailing under irrigation contributed to the severity of the attack.

A number of cases of "drowning" or "wet feet" were observed in the district after the heavy rains of February, but, with few exceptions the crops recovered after about a week of dry weather. These occurrences served to demonstrate the need for more adequate drainage to provide for such contingencies as heavy wet seasons, which are likely to recur from time to time.

PESTS.

In the early stages in the field cutworms made their appearance, and in a few isolated cases were responsible for some mortality among young transplants. The effectiveness of the usual Paris green bait provides the grower with an excellent control, and growers do not fail to make use of this bait whenever cutworms are found; consequently losses from this cause have never reached serious proportions. On the other hand, the wireworm and the false wireworm have caused heavier losses in a number of instances, and, as no such effective remedy is available, their control has been far less satisfactory. From observations and reports received it would appear that these insects have been present in most parts of the district.

Though both the stem-borer and the leaf-miner have been present during the season, they have not been responsible for the extensive losses which have been reported in the past. Of the two the leaf-miner has been the more common, and in individual cases the losses have been heavy. It is worthy of note that the most serious outbreaks of these two pests occurred on Emerald Creek.

In maturing crops quite serious damage has been caused by leaf-eating insects, which would include the green tobacco loopers, the budworm, and the cluster caterpillar. While the damage caused by the cluster caterpillar is rather spectacular, the losses are rarely as heavy as those caused by the other leaf-eating caterpillars. The former will completely destroy whole leaves, whereas the latter are likely to damage many leaves on each plant, thereby reducing the value of every leaf produced, and the total loss is usually much greater than where a limited number of leaves are totally destroyed. When the leaf-eating caterpillars attack young crops some measure of control may be effected by consistent dusting or baiting. When, however, the attack does not occur till the later stages of growth, the use of arsenicals must be discontinued on account of the risk of residues on marketable leaf. Therefore, the grower must have recourse to the more costly method of hand picking of the caterpillars. During the past season insects of these species affected crops at all stages of growth, and considerable losses were sustained by a number of growers. Soon after the monsoonal rains most of these insects disappeared, but not before they had caused appreciable losses. In this connection also the heaviest losses were to be found in the Emerald Creek area.

The whole question of insect damage has been most acute in the Emerald Creek area, where a set of conditions is encountered quite distinct from those in other areas. Most growers endeavour to produce two distinct crops per season, and by so doing reduce the period during which no tobacco is growing. For instance, at the present time the destruction of last season's tobacco stalks is barely completed; yet at least two growers have young seedlings for an early crop already above ground. Obviously, the time is not far distant when the growers in this area will be forced to take stock of the position and make some endeavour to reach unanimity in the matter of time of planting, and to limit the growing of tobacco to one crop per season.

With the continued production of tobacco on the sandy soils of the district, nematodes are rapidly increasing, and are even now responsible for heavy losses, the extent of which it would be most difficult to estimate. Growers are appreciating the seriousness of the problem, but to date are making no attempt to effect a control by approved methods such as fallowing and crop rotations. The most pronounced losses have been experienced in the irrigation areas, where, no doubt, the flow of irrigation waters is assisting in the more rapid distribution of the organisms. There is no doubt that the problem calls for further investigation, and it is hoped during the coming season to carry out experimental work in connection with the control of nematodes.

IRRIGATION.

Tobacco is grown under irrigation principally in the Emerald Creek and Barron River areas within the district. It has been the usual practice to have these irrigated crops planted out much earlier than the main crop, and in most instances the farmers in these areas attempt to grow two distinct crops each season. It is most doubtful whether such early planting is justified, especially when the results obtained in these areas are compared with those obtained with crops grown in the normal period of the year.

During the past season diseases and pests have been responsible for considerable reduction in the value of the leaf produced. From information gleaned from various sources it would appear that the position has been somewhat similar for the past few years, till at the present time the outlook is far from bright.

CURING.

Curing first commenced in the irrigation areas during December and continued until the end of May. Good cures were obtained until the onset of the rains, the leaf being rather brighter than usual for this part of the district, though the proportion of damaged leaf was high. Immediately following the rains "frog-eye" leafspot made its appearance in the cured product. In quite a number of cases leaf commenced to break down in the field from other causes, and leaf of very inferior quality was produced subsequently.

In other parts of the district curing did not commence until the end of February. Leaf from the first of these cures was consistently bright in colour, though rather light in body. In later cures heavier bodied, bright leaf was cured throughout, the top leaves only of the later crops being of inferior quality. Immediately following the commencement of curing operations leaf ripened very rapidly, and growers found some difficulty in coping with the harvesting for a period of several weeks. Later, as the weather became cooler, ripening was retarded and leaf of poorer quality resulted. Leaf cured during the month of May was very harsh and "boardy," and its value would be very low.

GRADING.

A considerable proportion of the leaf produced this season has been graded on the farms, and local grading sheds have found some difficulty in obtaining sufficient leaf to allow them to carry out operations without interruption. The standard of farm grading is fair, but there is room for considerable improvement in certain directions. Comparatively few farmers or graders have a thorough grasp of the requirements of the trade, though they do have a fairly good conception of colour grades as such. While colour is an important characteristic, it is not the only one, and leaf graded on the basis of colour alone will not command the same prices as leaf graded on the basis of colour, texture, and size.

PRODUCTION.

In the Mareeba district there are a total of about 165 effective tobacco growers, who have been responsible for some 1,050 acres during the season under review, making an average of 6 acres per grower. It is estimated that the total production will be approximately 290 short tons, some of which is leaf of excellent quality, though there will be a high percentage of lower grade leaf.

SALES.

Two series of sales were held in Brisbane at which the past season's leaf was auctioned.

Returns have given some indication of the relative values of the leaf produced from each of the sections into which the district has been subdivided.

There has been no opportunity for a personal examination of all leaf submitted for sale in Brisbane, but in those cases where such an opportunity was provided it is apparent that there has been a definite increase in the prices paid for good quality leaf with possibly no increase for low-grade leaf. Bright leaf has sold remarkably well, and growers on the whole seem to have been well satisfied with the prices obtained. The effect of this increase in prices will no doubt have the effect of giving greater encouragement to the present growers, and also of attracting a limited number of new growers into the industry. There is a general spirit of optimism prevailing, and most growers are contemplating an increase in the area under tobacco for the coming season.

GENERAL CONSIDERATIONS.

From previous remarks it will be noted that there is every likelihood of some expansion in the industry in this district. Growers are gradually becoming more efficient, though the percentage of poor and unsuitable farmers still remains very high. There is everywhere a need for a certain amount of extension work which it is considered must be of a demonstrational nature. At the same time the need for further research into the many problems with which the industry is beset cannot be overlooked. By a concentration on this aspect of the work it is believed that the best results will be obtained, for a well-conducted experiment for the investigation of some more or less complex problem may well provide a demonstration of the normal practices which are considered to give the best results.

In this connection it is considered that success in experimentation can only be attained where the experimental areas are under the direct control of the departmental officers, who should be in a position to have any operations carried out in the best possible manner and at the most suitable time.

ROYCE C. CANNON,
Instructor in Agriculture.

DIMBULAH.

The Field Assistant at Dimbulah, Mr. H. McNee, reports that the period under review was the second successive good year experienced.

The realisation of the necessity of correct cultivation prior to planting is annually becoming more evident.

Fertilizers generally used consist of the following formulae:—(1) 4:12:6, (2) 2:15:4, (3) 4:13:4, (4) 4½:12:4½. No. 1 is in general use at rates varying from 400 lb. to 1,000 lb. per acre on the light, sandy soils, while Nos. 3 and 4 are used occasionally by men on heavier and lighter types of sandy soil respectively. No. 2 is universally used on the river flat or sandy loam country at rates varying from 400 lb. to 700 lb. per acre.

Yellow Patch of seedlings has again manifested itself as a disease of first importance, and became the most serious seed-bed problem of the year.

There were a few instances of shortage of plants, but this difficulty was overcome, and growers were able to obtain enough good seedlings to plant their maximum areas.

Warne is the most sought for variety in the Dimbulah district. Other varieties grown are, in order of choice:—Hickory Pryor, Cash, Bonanza, Gold Dollar, Yellow Pryor, and Jamaica.

Planting conditions were probably the best experienced since the inception of tobacco growing in North Queensland.

No standard method of cultivation has yet been adopted, but as a principle deep aeration close to the plant was generally recognised. Many growers use a pony plough, and this implement does excellent work. The implement in more general use is the scarifier, which, with its different tyne attachments, can be adjusted to do most of the cultivation necessary. The "wiggle tail" also works well in remaking and cleaning hills. It has been observed, however, that the plough cultivation obviates, to a large extent, hand chipping by creating a more open soil, and cleansing thoroughly the entire centres of the rows. A wider and flatter hill allows better root development.

Full barns of well-cured, ripe leaf represented the cropping results on most farms. The practice of farm grading is extending.

The year's experiment programme included cultivation and spacing experiments; stem borer control trials; variety and fertilizer trials; and crop rotation trials. Seed-bed work included an investigation of the incidence of Yellow Patch of seedlings. A small seed propagation plot was moderately successful in that seven out of eleven crossbred varieties bred at South Johnstone have provided seed for future use. Two soil erosion demonstrations were successfully laid down. The peanut is the main rotational crop on tobacco farms..

The tobacco industry in Dimbulah provides labour for some 400 men during the growing and harvesting season.

ST. LUCIA FARM TRAINING SCHOOL.

In the course of the year, fifty-nine boys completed training. Of that number, fifty-six were placed on farms and three were awarded scholarships tenable at the Queensland Agricultural High School and College. The placing of the boys has been accomplished principally through the rural section of the Juvenile Employment Bureau.

Several factors have rendered the continuation of the Training Farm under the present scheme and on its present location difficult. The introduction of the subsidy scheme for juvenile farm labour in June last year, presented a superficially more attractive scheme to untrained youth, and has resulted in a reduction in the number offering for training at the farm. Further, the ground works, excavations, and the construction of buildings for the new University have seriously curtailed the areas available for cultivation and pasture. It is thus evident that the continuation of the training farm on the present site for more than a few months may become impracticable.

Satisfactory weather conditions during the past twelve months have resulted in high crop yields and satisfactory returns from the dairy herd and piggery. Sufficient grain and hay were produced to carry the farm stock over the full yearly period.

No alteration has been found necessary in the rotational system for regulating the practical training of the boys now in vogue, and lecture courses by officers of the Department of Agriculture and Stock have been continued as in previous years. An officer of the Queensland Ambulance Transport Brigade regularly lectures on first-aid.

The general tone of the farm school has been maintained at a high standard. The social welfare of the trainees has been a primary consideration, and in the field of recreational and competitive sport the year was a satisfactory one.

J. A. KERR,
Supervisor.

REPORT OF THE BUREAU OF TROPICAL AGRICULTURE.

The activities of the Bureau of Tropical Agriculture for the past twelve months have been varied and comprehensive. Investigations covered the following fields of observation and research:—

- Pasture research work.
- Soil investigational work.
- Tropical fruit research, including granadilla, papaw, passion fruit, and mango.
- Maize-breeding.
- Maize fertilizer trials.
- Grass varietal trials.
- Green manurial trials.
- Tobacco-breeding.

The completion of the new laboratory, together with offices and seedroom, has greatly facilitated the satisfactory conduct of the work at the Bureau. Developmental work has included the clearing of a new cultivation on the flat and the grassing-down of the felled scrub area on the Basilisk foothills.

Seasonal Conditions.—Generally, the year has been noteworthy for its comparatively dry periods, indicated in the accompanying rainfall records:—

	Rainfall.	Wet Days.
July	7·36	17
August	4·02	12
September	3·17	16
October	0·12	3
November	11·85	10
December	1·83	5
January	26·93	17
February	28·58	17
March	7·87	12
April	0·80	9
May	7·56	25
June	6·28	15 (up to 17th June)

General observation crops consist of the following:—Cowcane, bananas, citrus, tea, coffee, sweet corn, sorghum, Tapilan bean, sweet potatoes and yams, and the legumes Kudzu, Stylosanthes (two), *Dolichos hosei,* rice bean, and Desmodiums (two). The importance of the legume would justify further extensive trials. Of those already established on the station, *Stylosanthes guyannensis* appears the most adaptable. Planted in November, 1937, it has made steady and persistent growth, and where planted 2 feet apart is 3 feet in height, while in the single row observational trial the tendency has been to lodge and flatten out to a width of 4 feet and a height of 2 feet. *Guyannensis* showed no signs of flowering for a period of five months and three weeks, but from then on it has continued to flower profusely. Weather permitting, it is anticipated that a considerable amount of seed will be harvested from the trial plots. It would appear from present indications that *Stylosanthes guyannensis* will thrive under tropical conditions, and its vigorous growth would indicate its possibility to compete satisfactorily with bulky northern pasture growths such as panicum and molasses grass. Observations of its rooting habit were carried out by washing away the soil from the roots and it was observed the roots had penetrated to a depth of more than 5 feet, while extensive feeding roots had developed. Satisfactory development of nodules by nitrogen-forming bacteria were also observed on the lateral root system, indicating the possibility of its persistency of growth under local tropical conditions. It is interesting to note, also, that where the growth was decumbent in habit small fibrous roots developed under wet conditions. Efforts were accordingly made to propagate by cuttings, and five out of six cuttings were successfully established.

Stylosanthes sundaica, also, was successfully established, but it is problematical if its slower decumbent growth would be vigorous enough to withstand competition of quick-growing bulky grasses.

Dolichos hosei is well established, but does not thrive during the drier times periodically encountered in North Queensland. Its low lateral growing and rooting habit indicates its ability to compete successfully with other fodder growths.

Two Desmodiums—*triflorum,* from the Solomon Islands, and *scorpiurus,* from New Guinea—have been established. It is, however, too early to form any conclusions as to their value as legumes at the Bureau.

Kudzu vine, while making rapid growth during the warmer period of the year, at present shows a checked, hard growth, and does not appear to produce the succulent palatable growth of the former legumes.

Derris elliptica plants received from the Botanical Gardens, Darwin, made steady growth during the summer and autumn months, but have developed rapidly during later autumn and winter. Owing to the limited number of plants available, no endeavour has been made to investigate the present root development. Cuttings are being made to augment the supply of material.

Two varieties of jute were planted in rows 6 inches apart on 16th March and good strikes obtained. Dry conditions during the remainder of the month and further dry conditions in April retarded normal growth. Beneficial rain in May produced a rapid response in *Corchorus capsularis,* and its present height is approximately 2 feet 6 inches. *Corchorus olitarius,* however, grew to 6 inches high and matured, making no response to the better conditions in May. The trial was repeated, when satisfactory growth again was evinced in the case of *capsularis,* while *olitarius* failed to make any further growth after appearing above the ground, thus proving its unsuitability under local conditions.

Ramie (*Bachmeria nivea*) seed was planted on two occasions in well-formed seed-beds at ground level for the purpose of propagation for subsequent subdivision. Unfortunately, no plants were produced. Germination tests of the seed were made and proved satisfactory. It was thought that ants had carried the seed away. A large box-frame seed-bed 6 feet by 10 feet was then made. The frame was erected on six legs approximately 2 feet above ground level and placed in cut kerosene tins containing water. Seed was planted, but further negative results were obtained. Samples of seed were recently taken to Brisbane by th Director of Agriculture for further germination tests, but no results are yet available.

Grasses.—The following grasses are now established in plots 3 chains long by 12 feet wide:—*Digitaria eriantha, D. pentzii, D. valida, D. polevansii, D. Milanjiana, Urochloa pullulans, U. trichopus, U. bulbodes, Brachiaria decumbens, Setaria aurea, Panicum maximum* (fine-stemmed Guinea), *P. coloratum, P. maximum* (Typicum), *Melinis minutiflora.* Single rows of the following are also established:—*Amphilophis glabra, Cenchrus ciliarus, Dichantum nodosus, Andropogon distachys, Cynodon plectostachyum.*

The most outstanding grass is undoubtedly *Panicum coloratum.* By its rapid growth and multiple stooling habits, it is capable of competing with other native grasses. Its growth is both bulky and succulent, and its seeding propensities are excellent. Efforts to obtain seed at the Bureau have not been successful, as the prevalence of finches has prevented the harvesting of viable seed. The establishment of plots in more favourably situated localities is inevitable to rapidly increase the propagation of this grass.

Cynodon plectostachyum has produced soft, succulent growth even during dry periods. The limited knowledge of this grass, apart from its apparent excellent analysis, and the possibility of its becoming a pest on agricultural land, suggests it should be treated with caution. Of the Digitaria grasses, *milanjiana* is proving the most promising variety. It rapidly produces a good body of soft, succulent foliage. It reproduces by sending out long laterals which root from each node, and it sets seed freely.

Other grasses which appear impressive are *Urochloa bulbodes* and *Brachiaria decumbens,* both of which made rapid and bulky growth. They seed well and cover the ground well, which is so essential under local conditions to prevent the ingress of native grasses.

Pasture Mixture.—A mixture of *P. coloratum* and molasses grass was tried on the new scrub clearing, both grasses being planted from seed. Satisfactory results have been obtained, and the mixture appears to offer possibilities of a satisfactory combination on new scrub areas in North Queensland.

Lucerne Trial.—An experimental area of approximately half an acre was thoroughly prepared and a fertilizer trial combined with a planting trial with both inoculated and untreated seed was initiated. The plot was planted on the new alluvial flat on 30th May, and favourable showery weather began on 1st June. Good germination was obtained on all treatments. Further details are available in Mr. Cartmill's report.

Reports of the plant-breeding activities by Dr. L. G. Miles, the analytic and fertilizer investigations by Mr. W. J. Cartmill, and the investigational work connected with tropical fruit by Mr. G. W. J. Agnew are enclosed herewith and embodied in this report.

N. E. GOODCHILD,
Senior Instructor in Agriculture.

(1) AGRICULTURAL RESEARCH.

The Atherton Tableland maize-breeding plots of the 1936-37 season were located as follows:—

Upper Barron road.—Macaulay-type selection plot including all types being studied.

East Barron.—Ear-to-row plot including types from that area.

Cairns road.—Ear-to-row plot including types from that area.

Tolga.—Ear-to-row plot including types from that area.

Of these plots, the first was harvested in its entirety, and the produce of individual progenies was weighed in the field. A number of selections were made in the field from the best progenies based on (*a*) yield, (*b*) grain quality, and (*c*) uniformity of type. These selected ears were worked over at South Johnstone and subjected to more rigid selection after shelling, notes being taken on pertinent ear and grain characters.

The ear-to-row plots were not completely harvested, but selections were made based on field characters, and the ears subjected to further selection on the basis of grain characters at South Johnstone. Considerable variations in strain type were noticeable on all plots, but, in particular, that at Upper Barron road, where marked differences in the uniformity of the progenies were also in evidence.

The programme for this year was subdivided into two sections—(*a*) comprising flinty and semi-flinty material of Durum origin, and (*b*) comprising the heavy-yielding, large-grained, starchier Tableland material. The grain from individual selected ears was planted in separate plots, of which the dimensions were ½ chain by ten rows (4 feet apart) or 33 by 40 feet. Plots from sister ears were, as far as possible, grouped together in approximately square blocks, so as to ensure a minimum of out-pollination with unrelated material.

Eighty plots of the Durum and semi-Durum strains were located at the farm of A. Peluchetti, Upper Barron road. Planting of this area was delayed (18th 20th December, 1937) owing to the unavoidably late preparation of the land by the farmer. Planting material was obtained from the best selections of Durum and allied types from the plot on the same farm the previous season.

In January, 1938, the stand was found to be very variable in the range of plots nearest the standing scrub on the northern side of the field. Holes along the affected rows indicated that burrowing animals were responsible for this trouble. Elsewhere throughout the field the stand was ideal, averaging after thinning 1·5 plants to 2 feet in the row.

This plot missed the ideal growing conditions of December, but still made rapid growth to tasselling time. At this time (the beginning of March) dry weather was encountered, and cobbing was not nearly so heavy as on earlier-planted crops. The yield should still be very satisfactory, however, and the plot promises to offer excellent material for the continuation of the work.

The other plot, located at East Barron, also comprised eighty plots of equal size to those at Upper Barron road. Material for the plot was obtained from the best selections of the general Atherton types of maize from the 1937 plot at the lastmentioned location and the ear-to-row plots at East Barron, Cairns road, and Tolga.

Planting was carried out on 1st and 2nd December, 1937, and the stand obtained was very satisfactory. Weather conditions were ideal during the months December to February, with the result that phenomenal growth was made, and a heavy set of cobs produced before the dry weather set in. With satisfactory harvesting conditions, exceptionally good yields will be obtained from this area.

End-season conditions promise to be unfavourable for Atherton maize this year, and both plots may suffer as a result of excessive rain during the months of June to August.

A prolonged wet season commenced early in May, and has continued into June, with little prospect of breaking during the near future. Harvesting operations will proceed immediately suitable weather conditions are announced.

Maize Varietal Trial.

As the first of a series of varietal trials which will become more comprehensive as time goes on, a simple trial was laid down at Atherton during the past season.

Three types were used in this test—Improved Yellow Dent (ex Departmental supplies, Brisbane); a large-grained starchy Atherton type; and a Durum type. The latter two types, secured from my breeding material, were not yet fixed, but could be regarded as approaching varietal status. Six randomised blocks were used (the total area being ·87 acre), and planting was carried out by hand on 1st December, 1937.

On 17th March, 1938, notes were taken on growth characters, height of ear, and number of barren stalks. The plot was harvested on 25th to 27th May, 1938, and weights were taken in the field of (*a*) sound and (*b*) diseased cobs; the number of diseased cobs per plot was also determined. Samples were taken from all plots and bulked according to variety, for determination of shelling percentage and moisture content of the grain, the latter tests being made by Mr. A. Hamilton at the laboratory of the Atherton Tableland Maize Board.

The results (summarised below and on the following page) afford some interesting comparisons:—

Location: Maund's road, Atherton.

Plan of Experiment: Six randomised blocks.

Varieties Tested: A, a selection of Durum type; B, a selection of large-grained starchy Tableland type; and C, Improved Yellow Dent.

Size of Plot: Three rows, 2 chains 44 feet in length, and 4 feet apart—comprising ·485 square chain.

Summary of Results.

Variety.	Mean height of ear.	Significant exceeds.	Number of barren stalks.		
			Per six plots.	Per acre.	Difference.
A	5 ft. 7 in.	C	77	265	None significant.
B	5 ft. 9 in.	C	59	203	
C	5 ft. 0 in.	..	54	186	

Variety.	Actual grain yield.			Yield of grain at 14 per cent. moisture.		
	Lb. per six plots.	Cwt. per acre.	Significant exceeds.	Lb. per six plots.	Cwt. per acre.	Significant exceeds.
A	655·2	20·1	C	619·4	19·0	C
B	756·0	23·2	A and C	718·1	22·0	A and C
C	543·2	16·7	..	512·9	15·7	..
Mean	..	20·0	..	..	18·9	..
Minimum significant difference in lb. per 6 plots :—						
..	94·2	..	..	90·4	..	..

Variety.	Number of diseased cobs.			Weight of diseased cobs.		
	Per six plots.	Per acre.	Difference.	Lb per six plots.	Cwt. per acre.	Difference.
A	451	1,550	None significant.	185	5·7	None significant.
B	311	1,069		151	4·6	
C	415	1,427		183	5·6	

In yield (based on 14 per cent. moisture content) the average of the experiment was 18·9 cwt. to the acre. The large-grained Atherton type significantly outyielded either of the other varieties, while the Durum significantly exceeded I.Y.D. The differences in each case were of the order of 3 cwt. per acre.

In carriage of ear, I.Y.D. was outstanding, a feature of this variety being the relatively low ear height (significantly lower than either of the other varieties) and the regular turning-down of the ear at maturity. In both the Durum and the Atherton type the ears were borne inconveniently high, and the percentage of turned-down ears was much lower. Attention will be given to this character in breeding, and attempts made to effect an improvement.

A notable feature of the plot was the high incidence of disease, as manifested in the number of barren stalks, and later in the number and weight of diseased cobs. The mean number of diseased cobs per acre is found to be 1,349; if we assume that these were produced at the rate of three cobs to every two plants, the number of contributing plants per acre was 900. Add to this the mean number of barren stalks per acre and the total is 1,118. Assuming again a planting rate (as aimed at) of two plants to every 3 feet in rows 4 feet apart, the number of plants per acre would be 7,260. On the basis of these assumptions, which, of course, can be regarded only as a broad approximation, the percentage of diseased plants reaches the high value of over 15 per cent.

The incidence of the diseases responsible was evidently associated with soil patches, and not with the individual seed lots or with varietal susceptibility. No significant differences between varieties were furnished by any of these three criteria (number of barren stalks, number of diseased cobs, or weight of diseased cobs), and it was noted when picking that certain areas of the plot were most affected, irrespective of the varieties present. Indications are therefore that, until disease-resistant strains may be found, the incidence of *Diplodia zeæ* and other plant and ear-rot diseases is dependent more on climatic and soils factors than on varietal type. Naturally, more light will be shed on this problem as the series proceeds.

SWEET CORN.

During the harvest of 1936 a few sugary grains were found as a mutant type on an otherwise starchy ear. The grains were sown at South Johnstone during the winter of 1937, and seed from the resultant cobs has been planted out in a small plot this winter. Ears from this crop will be tested at this station for sugar content, and samples will also be given a culinary test for palatability.

A great advantage of sweet corn obtained in this manner from field corn is the vigour and productivity of the crop as contrasted with many of the dwarf strains from overseas. Should this material yield a satisfactory variety, it will be thoroughly tested, described, named, and liberated. If it should prove to be of a good sugary type but inferior in certain field characteristics (*e.g.*, it may be over-late in maturing), crosses will be made with suitable field types in an endeavour to effect an improvement. In any case it may be deemed advisable to cross this material with Funk's Ninety-Day or other early-maturing variety, to develop an earlier-maturing sweet corn.

COASTAL MAIZE PLOTS.

As a supplementary programme to that on the Tableland, attempts have been made to establish ear-to-row plots on the lower alluvial portion of the farm at South Johnstone, such rows to be used for multiple sib-pollination (*vide* my programme of 10th September, 1936).

One plot of 130 rows, comprising 1·5 acre, was planted on 17th to 18th January, 1938, the remainder of the area being sown with Mauritius bean for the wet-season period. The January planting was purely experimental, it being intended to plant the major plot later in the half-year following the ploughing-under of the green crop. Two heavy floods at intervals of three weeks inundated the area, entirely submerging the crop for periods of twelve to twenty-four hours. As a result of this setback, the plot was rendered useless for breeding purposes, and the crop will be harvested and utilised for feed.

TOBACCO.

Seed of the following varieties was supplied by Mr. L. F. Mandelson:—Wyemo strain (reputed as somewhat resistent to blue mould); Honduras (nematode-resistant); Faucette's Special (nematode-resistant); Kelly (South African; soft leaf; good curing).

Seed-boxes were sown with each variety, and Gold Dollar and "400" were included in the series. The purpose of the sowings is to raise pure seed of the varieties, and also to cross Gold Dollar with each of the first three in an attempt to improve its resistance to blue mould and to nematode attack. Kelly will be crossed with Wyemo strain with the same object in view (as regards blue mould).

A satisfactory germination was obtained in all varieties except Faucette's Special. The seed of the latter was nine years old, and has almost certainly lost its viability. A row of each will be transplanted into the field within the next few weeks.

L. G. MILES, Research Officer.

(2) TROPICAL HORTICULTURAL RESEARCH.

During 1937 a horticultural research programme for the northern tropical coast was approved by the Director of Plant Industry (Research) and included fundamental studies with the papaw and granadilla and investigations on asexual propagation methods with mangoes and citrus fruits.

Papaw (Carica papaya).

Breeding Plot.—The focus of study with this fruit is principally directed to the "standarisation of varietal type".[1] To achieve this end with a fruit such as the papaw, which presents complex biological problems, particularly with regard to sexual differentiation, the investigational work in hand has been initiated in collaboration with Research Officer Dr. L. G. Miles, who is engaged in breeding and genetical studies.

A selection has been made of some of the basic papaw types representative of the variety of forms growing on the tropical coast, the method of selection being based chiefly on natural fruit and floral differences. A large number of seedlings were raised during October, 1937, from these chosen types, and up to twenty selected trees from each were planted out in the breeding plot. The plot now contains the progeny of diœcious and hermaphrodite monœcious forms, and includes the selections IF, 2H, 3H, 4H, 5H, 6H, 8F, 9F, 10 H, 11F, 12F, 13F, 14F, 15H, 16F, 17F, Solo No. 1, Solo No. 2, Ferguson, Bulolo, and Nambour No. 1.

Although normal growth and development was severely retarded by flood conditions in January and February, and a general attack by the coreid bug, "*Amblypelta lutescens*"[2] a large number of trees have been flowering since the end of April and have thus enabled breeding operations to proceed.

Vegetative Propagation.—Towards the end of this year it will be possible to utilise in the asexual propagation trials plants whose parentage is known and bearing the desired features for perpetuation. At present preliminary propagation studies have been made with plants of mixed origin.

A. A grafting trial is in progress in an open nursery bed, using 100 seedling stocks with solid stems 8 to 15 mms. in diameter. The cleft and wedge grafts, which have given success with other herbaceous plants, have been adopted. The possibilities of spade-budding are also being investigated. The scion material used has been taken from decapitated female and hermaphrodite trees. Scions have been grafted by using (1) the entire shoot, (2) the proximal (or basal) section only, and (3) the distal (or apical) section only. The chief difficulty in a trial of this nature is to obtain sufficient scions of the required size at the same time. However, it will be possible to use many of the trees from the breeding plot next season as scion producers after they have served their present purpose. Scion material at present has been from old trees at the station and from papaw plantations.

B. 150 young papaw plants have been planted out in the field for grafting when their stems are from 3 to 4 cms. in diameter and hollow. These should be suitable for working in August.

C. Twenty-two superfluous males from 5F and 13F were decapitated for working over with female and hermaphrodite scions. Decapitations to determine a satisfactory method for the production of suitable shoots on the male stock have been made as follows:—

(1) Removal of whole of plant top, leaving stem 1-2 feet long;
(2) Decapitation immediately below flowering section;
(3) Removal of growing tip only.

Although yet incomplete, present indications favour decapitation immediately below the floral buds. Using the cleft method, a number of grafts has been made directly on to the main stem of the male, using only the proximal end of the scions. This method has at present shown some success, whereas grafts made with the soft apical section of the scion have been failures where they contacted the older, harder, wood of the males.

D. Various graft union coverings are being tested in the grafting trials, as these grafts have been made under exposed conditions, and are subjected to long periods of rainy weather. The following materials are being tested:—

(1) Calico alone;
(2) Calico and grafting wax;
(3) Calico and paraffin;
(4) Calico and petroleum jelly;
(5) Raffia alone;
(6) Raffia and grafting wax;
(7) Raffia and paraffin;
(8) Raffia and petroleum jelly.

Graft unions covered with one winding of raffia and smeared with petroleum jelly have given excellent results, with greater success than any of the other listed methods. Recently graft covers have been tried with "rubber strips about 1 cm. wide from the inside of golf balls"[3].

Branching Trial.—Although this experiment augmented next season when planting material (from which principally fruiting forms can be expected and few or no males) will be available from the breeding plot, fifty-four trees have been included in this trial. They are being decapitated at different stages of development to study the effects of branching with relation to fruit production, as against the normal single-stem growth. The methods employed in this test are:—

(1) Single stem;
(2) Double stem—decapitated at 6 inches;
(3) Double stem—decapitated at 2 feet;
(7) Treble stem—decapitated when floral buds appear;
(5) Treble stem—decapitated at 6 inches;
(6) Treble stem—decapitated at 2 feet;
(7) Treble stem—decapitated when floral buds appear.

The trees used in this test were planted in March.

Vigour and Sex Form.—The object of this experiment is to determine if a correlation exists between vigour of growth and ultimate sex form. A selection was made of twenty-nine plants each of V (vigorous) and V — (less vigorous) seedlings from a bed of Solo progeny. These were planted in the field and measurements taken of stem height and diameter. Measurements will be taken again when the sex is determined.

Fruit Bud and Fruit Development.—In preparation for a study of bud development next fruiting season with papaw strains of known parentage, fruit buds on twenty-one trees were labelled when they appeared, and the period of development to the flower, and thence to fruit maturity, is being observed. Buds are being labelled at approximately monthly intervals.

Pot Maturing Trial.—A preliminary manurial trial with young seedling papaws is in progress. The object is to obtain data on the effects of added manure supplied from inorganic and organic sources in the development of young papaw plants growing in the silt-loam soil where the plot is established. Results obtained from this trial will act as a guide to a more extensive field trial in determining future soil treatments for papaws at this station. The soil treatments in the pot experiment are:—

Unlimited series—

(1) Control;

(2) Ammon. sulph.; super.; pot. sulph.; 2-6-1.

(3) Dried blood; super.; pot. sulph.; 2-6-1 equivalent.

(4) Animal excreta; super.; pot. sulph.; 2-6-1 equivalent.

Limed Series.—5, 6, 7, 8 correspond to 1, 2, 3, 4 respectively.

Each treatment has four replications.

Progress growth counts have been made which include (1) stem height; (2) stem diameter; (3) number of leaves. This experiment will continue until the plants are about 18 inches high. As these potted plants have necessarily been exposed, continuous rains through the whole of May have retarded growth.

Primary Leaf Studies in Seedlings.—A study was made of the shape of the three primary leaves (*a*, *b*, *c*) after the cotyledonary leaves with nine random samples of seedlings of each of ten selected papaw types. The object was to determine possible correlations between primary leaf characters and selected fruit type. Actual size drawings of leaf (*a*) showed no differentiation in any of the ten types. Leaf (*b*) showed differentiation in seven of the ten types, and leaf (*c*) showed differentiation in all forms except one (12F). When materials of known parentage are available next season, it is intended to further these studies.

GRANADILLAS.

Pollination Studies.—As portion of the research programme for granadillas, a pollination trial was conducted in collaboration with Dr. L. G. Miles. The objects were to determine the most effective method of pollination which would ensure a satisfactory set of fruit with *Passiflora quadrangularis* L.

The experiment extended over a period of four distinct blossomings during December and January. Sixteen one-year-old vines of *P. quadrangularis* were used in the experiment. The pollination treatments were as follows:—

(1) Untreated; subject to natural self-pollination or to open pollination.

(2) Hand cross pollination; removal of the anthers after the opening of flower, and fertilization with pollen from other vines.

(3) (*a*) Hand-pollination in the bud just prior to opening with pollen from opened flowers of the same vine.

(*b*) Hand-selfing immediately on opening of the flower.

(4) Hand-selfing at full development of the flower.

Each treatment was replicated in four randomised blocks. The results of this experiment together with studies of floral characteristics and development were published in the *Queensland Agricultural Journal*, xlix., 4.

Four South Johnstone conditions hand-selfing on the morning of floral opening gave significantly better results than any other pollination treatment.

A check pollination trial was made in late January using selfed and hand crossed methods alternatively on all vines under experiment. The resultant fruit-setting was low, due to protracted heavy rains.

Results obtained from these pollination studies have given scope for further research activity during the forthcoming season.

Extension of Planting.—Two 240-ft. pergola trellises have been erected and cuttings have been planted at 12 ft. distances along the trellises. There are twenty vines of *P. quadrangularis* and the same number of macrocarpa. This will enable parallel studies of the two species which are grown in North Queensland commercially to be made.

CITRUS STOCK WORK.

About 500 seeds of the selected stock varieties chosen during the past season were planted in the nursery. *C. limona* and *C. aurantium* gave excellent germination results, although *aurantium* was considerably slower in germinating. Eighty plants of each have been planted in the field nursery for propagation purposes. A poor germination was recorded from *C. sinensis* and *C. nobilis*, as a result of which only twenty plants of the former and forty plants of the latter were obtained. These were tubed in the nursery house until they attained sufficient size for transplanting to the field. A second set of seedlings have been raised to provide for any deficiency which may arise in the field.

MANGO STOCK AND PROPAGATION EXPERIMENT.

In collaboration with Mr. S. E. Stephens, the programme for mango stock studies has been initiated. One hundred seeds of each of the twelve selected varieties were planted in the nursery in early January, and seedlings from these were planted out in the field in February. Two hundred plants of Sesbania pea have been planted in the field to act as shelter trees for mango stocks.

Mango Floral Studies.

A visit was made to the Bowen district during July, and observations were made on the panicle characters of mango types selected for study during the previous fruiting season. The object of this work is to study the correlation of fruit and floral characters, preparatory to further varietal research on this fruit.

Fruit Fly Control.

A report was submitted to the Under Secretary on a series of observations in Charters Towers and Pentland districts relative to the spraying demonstrations by Mr. L. Laneyrie.

Other Orchard Crops.

Bananas.—The banana plot which comprises the varieties Cavendish, Mons Marie, Gros Michel, Lady Finger, Sugar, Red Dacca, and Ducasses came into bearing in December, and well-developed fruit was harvested from all but the Sugar and Lady Finger varieties. Fruit flies and the banana rust thrips have caused a considerable amount of damage to the crop. The Ducasses variety, although only a minor commercial type, has shown only a small amount of thrips rust damage, and has been free from leaf spot, which is very much in evidence in all other varieties.

Citrus.—The citrus orchard, which includes a number of varieties of lemons, oranges, mandarins, and grapefruit, has generally shown poor growth, although fertilized during last spring and again in the autumn of this year. All trees have been pruned and sprayed with arsenate of lead for leaf-eating caterpillars, and with white oil for red scale. The floor of the plot was covered with a crop of Mauritius beans during the summer months.

Other Tropical Fruits.—These include a few trees of avocados, jak fruit, custard apple, cashew, Ceylon gooseberry, rambutan, wampee, longan, &c., which have shown generally poor growth, due to seepage conditions in that area. Leaf-eating caterpillars and beetles have troubled these trees during the summer.

REFERENCES.

1. Dr. L. G. Miles—"Papaw Improvement Programme 1936."
2. W. J. S. Sloan—" Fruit-spotting Bugs, Pendulinus sp." Memo., 1937.
3. K. M. Smith—" Plant Viruses " (Grafting Herbaceous Plants).

G. W. J. AGNEW,
Pomologist.

(3) GENERAL FIELD WORK.

The new laboratory was completed in December, but it was not until the third and fourth month of the current year that the water supply and other essential utilities and apparatus were installed. Subsequently, considerable time was devoted to the setting up of the apparatus and the preparation of standard reagents. The period devoted to analytical and research work in the laboratory represents, therefore, only a small fraction of the year under review.

The laboratory investigational work in the nutritional value of pasture grasses in relation to the coastal fattening scheme was commenced as soon as it was practicable to do so, and a number of grass samples have been analysed. We are now in a position to give effect to most of of pastures caused by dry weather or severe white grub damage.

Field trials conducted at the bureau during the year include a green manurial trial and a number of fertilizer trials. The superiority of Mauritius Bean and Giant Cowpea over other well-known legumes was again demonstrated. Peanuts gave some promise, but, unfortunately, the strike of these was not good. The Poona Cowpea was again destroyed by a fungoid disease.

The area formerly under green manures is now growing a crop of maize. It has been divided to incorporate three treatments in a fertilizer trial—a control, superphosphate, and a superphosphate-sulphate of ammonia mixture. The evidence from present observations indicates that, although the green manures alone the programme of pasture work as drawn up at the commencement of the fattening experiments.

The amount of laboratory work to be done on soils alone is considerable. The projects of the coastal fattening experiment involve a fairly comprehensive soils investigation; intricate problems on the Tableland demand detail soil analyses; whilst miscellaneous field experiments at the Research Station and elsewhere provide a number of analytical determinations. At present there are over thirty soil samples on hand.

The nutritional values of maize and leguminous crops grown on the Tableland for use as ensilage have been determined. These samples were anlysed as part of the work being done by Departmental officers to encourage Tableland dairy farmers to provide against the depletion have been beneficial in promoting the growth of the maize, the fertilizer treatments have promoted the growth much more.

The lucerne trials which were conducted at the station last year were not as successful as they had at first promised to be. The plots that had been limed and fertilized with phosphate yielded a fair crop; in other plots the legumes reached a moderate height.

A lucerne plot has now been established on the bottom paddock. This paddock is on a lower elevation than most of the station property. The soil is a sandy alluvial, fairly well supplied with organic matter, is quite permeable, and the subsoil is at all times moist. The acidity (pH 5·6-5·8) is less than that of the major soil type (pH 4·6-5·0). This trial includes seed inoculation, liming, and four fertilizer treatments.

W. J. CARTMILL,
Assistant Research Officer.

REPORT OF THE DIRECTOR OF COTTON CULTURE.

The climatic conditions during the season under review were, as a whole, unfavourable for cotton growing, and when the acreage planted is considered, the yields obtained and the average quality thereof place the 1937-38 crop in the category of being a very unsatisfactory one.

It is most unfortunate that such adverse conditions were experienced for a marked expansion in acreage devoted to cotton occurred, following on a campaign of propaganda carried out by the Department of Agriculture and Stock and the Queensland Cotton Board. The number of growers increased from 3,197 during the 1936-37 season, to 3,689, while sufficient seed was purchased to plant 69,671 acres as compared with 56,511 acres for the previous crop. A satisfactory feature of this enlargement of acreage was the marked expansion in cotton growing that occurred in the South Burnett, a district which is well suited to profitable cotton production. With reasonably favourable seasonal conditions this acreage would have been ample to supply the requirements of the Australian spinners for the types of cotton grown in Queensland.

The development of the cotton spinning industry in Australia has continued satisfactorily during the season, the total requirements for cotton lint amounting to approximately 25,000 bales of lint. This was the amount of cotton announced prior to the season, for which bounty would be paid in case of Australia producing that quantity. It is anticipated that a further expansion will occur during the next twelve months, and the amount of cotton of the 1938-39 crop for which bounty will be paid has been fixed at 35,500 bales of lint.

Another programme of propaganda has been initiated at the end of this past season to increase the acreage of cotton and to bring to the attention of farmers the most suitable cultural methods for profitable cotton production. The excellent autumn rains experienced in all cotton growing districts have provided a splendid supply of subsoil moisture to assist the new crops during adverse periods. It is to be hoped, therefore, that a substantial increase in cotton growing will occur, for the prospects for good yields appear to be the most promising since the record 1933-34 season, when a wet winter was also experienced.

The Commonwealth Government announced during the season, the elimination of the 20 per cent. emergency cut in the bounty on raw cotton, which had operated throughout the period of the present bounty system. The payment of the full bounty was of marked benefit to the growers in a season in which very low overseas prices ruled throughout most of the period of receivals at the ginneries.

The Cotton Production Relief Loan operated by the Department of Labour and Industry has again been of substantial benefit to the cotton growing industry, as well as to the necessitous farmers and share farmers who were assisted financially. Members of the Field Staff of the Cotton Section of the Department of Agricultural and Stock once more assisted the scheme by inspecting applicants' holdings and reporting on their suitability for loans. A continuation of this form of financing cotton growers has been announced for the coming season, a fund of £15,000 being allotted for this purpose. The repayments of the loans made over the whole period of assistance have been satisfactory, considering the adverse seasons, and indicate the suitability of cotton for this form of crop loan work.

SEASONAL CONDITIONS.

Seasonal conditions were generally dry from July until October, when in some of the cotton areas planting rains were obtained, particularly in the Southern and Burnett areas. Following these storms high temperatures were recorded in combination with drying westerly winds, resulting in a loss of surface moisture, causing losses of stands through burning off. These losses would have been particularly heavy had not further useful rains fallen towards the end of the month, which allowed of any necessary replanting being carried out, as well as a continuance of the general planting being effected.

Further scattered storms commenced early in November, which allowed of replantings and final plantings being made. High temperatures followed this storm rain group and allowed successful eradication of weeds by cultivation, and also prevented any rank development in the young cotton plants. A second rain group operated around the latter part of the month, however, and in the Upper Burnett and southern areas, where the rainfall extended over a long period, growth became somewhat sappy, particularly on the more fertile country.

December generally was favourable to the development of the crop, except towards the end of the month, when temperatures became high, and continued until about the middle of January, when precipitations of value occurred over most of the cotton belt. From then on, through the whole of February and into the middle of March, excessively high temperatures and droughty conditions prevailed with disastrous results to the developing crop. The early planted cotton was forced into premature maturity and the later plantings shed a large proportion of their crops. Excellent general rains fell in the latter part of March and re-growth commenced in all except the very early cotton. A good setting of squares followed, but the development of these have been very slow, on account of continued dull, showery weather with very low maximum temperatures.

STANDARD OF CULTIVATION.

The standard of cultivation has definitely been superior to that of last season, nevertheless there remains ample room for improvement, especially on the older cultivations. More attention was also given to the preparation of the seed-beds, the advantage of which was reflected in the better strikes obtained where rainfall conditions were at all favourable.

Abandoned areas caused by the inability to cope with weed development, particularly in the Callide and Upper Burnett, have illustrated the necessity to rotate cotton with grassland as a means of reducing weed development to a minimum, particularly on the more fertile alluvials, where some of the weeds are of such a persistent type of growth.

Thinning, although carried out to a greater extent than last season, was rather ineffective in many cases, on account of insufficient spacing of the plants. This was unfortunate, as the class of season necessitated good spacing being practised, particularly on the more droughty soils.

CROP YIELDS.

To the 30th June, the total receivals of seed cotton amounted to 11,080,364 lb., producing 3,846,918 lb. of cotton lint, or 7,786 500-lb. bales, an increase of over 1,000 bales as compared with a similar time last season. Practically no killing frosts were experienced prior to mid-July, which seriously delayed the opening of the top bolls and the late planted crops. An appreciable amount of cotton is still likely to be harvested from the matured top crop, but owing to the wet, dull conditions that have prevailed through June and July, the quality and grade will suffer, and a large percentage will be snapped.

QUALITY OF THE CROP.

The harvesting conditions until the March rains were exceptionally favourable, and mostly cotton of good grade and staple was forwarded to the ginnery. The general quality of this cotton was surprisingly good, considering the exceptionally hot dry conditions ruling during February and most of March. The heavy rains in the latter part of March lowered the character of all unharvested cotton, however, which was further affected by the unusually showery autumn conditions. Much of the cotton harvested after the March rains was snapped owing to the burrs having softened so as to prevent economical clean hand picking.

GRADING.

The grading and classing of the crop has again been carried out by the cotton graders of the Department of Agriculture and Stock. A marked feature of the cotton this season has been the standard of preparation of the ginned cotton. The Manager of the Queensland Cotton Board is to be commended on the excellent "preparation" of the lint maintained at the ginneries, which compared very favourably with overseas work.

COTTON RESEARCH STATION.

The usual comprehensive programme of experiments was again carried out at the Cotton Research Station, Biloela, but owing to the adverse conditions that prevailed throughout most of the growing season, results obtained will, to a certain extent, be negatived, and the average yield will be considerably reduced.

Experiments on the value of cotton rotation and the utilisation of grasslands, or Rhodes grass, continue to give positive evidence of the value of this rotation, gains in yield of as much as 100 per cent. having been obtained. Soil moisture experiments have again demonstrated the moisture absorptive qualities of newer cultivation out of grassland as compared with the older cultivations where, on account of the loss of organic matter in the soil, through cultivation of successive crops of cotton, the soil particles adhere so closely that much rain is lost by run off. Where such run off occurs on fields of any degree of slope, the loss of valuable surface soil by sheet and gullying erosion seriously reduces soil fertility.

The regular breeding programme in the Miller variety was continued during the season, stress being particularly laid on studying selections and progeny material for promising jassid resistance types. An investigation was also instituted to ascertain the possibility of evolving a suitable commercial cotton by hybridization of the Miller variety with U.4, a jassid resistant variety developed in South Africa. The latter, on account of size of boll and character of fibre, has little commercial promise under Queensland conditions. This is a type of investigation that may require a long period to complete, but the increasing severity of jassid attacks in the last few seasons necessitates such avenues of improvement being studied.

Apart from the usual activities in cotton of the Station, additional crops are being studied, especially in relation to their suitability and adaptability to the Central District. Grain sorghum in particular offers possibilities of becoming a valuable grain crop for this and semi-arid districts, and testing and breeding work on an extensive scale has been undertaken at the Station.

PURE SEED OPERATIONS.

The increase of pure seed stocks of the newer medium stapled cottons has not progressed as rapidly as desired, owing to the continuance of adverse seasons. Considerable contamination also occurred as a result of replantings, but with good planting conditions in the coming season sufficient stocks should be available.

The breeding work in the Lone Star variety to evolve a drought resistant cotton has been successful, and some very fine crops of the better strains were obtained, in spite of the difficult season. Strain tests carried out between the commercial stocks and the more highly bred strains of this variety show a decided improvement has been obtained in the latter. Australian spinners again commented favourably on the suitability of Lone Star fibre for their requirements.

The Miller variety, which is undoubtedly the strongest cotton grown in Queensland, and produces a type of lint that is also sought after by the spinners, continues to yield satisfactorily. Breeding work in this variety has been continued at several centres to obtain suitable strains with an increased lint percentage.

Of the shorter stapled varieties, Half and Half and New Boykin appear to have good possibilities. The Half and Half requires a considerable amount of improvement, however, before a suitable uniform strain will be available, whereas New Boykin is of a much more uniform stock, and good progress is being made in breeding up improved strains of it.

INSTRUCTIONAL.

The Field Staff have been fully occupied throughout the year in the usual extension, advisory and experimental work. This includes the allocation of pure seed plots, demonstrating methods of combating insect pests, the laying out and planting of varietal tests and other experiments, and routine farm inspections. Generally, this latter phase of the work is most important, as the individual's problems can be discussed on the farm, and it is an excellent opportunity for the field officers concerned not only to explain the findings and results of the various investigations, but to keep in close touch with the problems of cotton culture that arise under the various conditions of a district.

For the purpose of further stimulating interest in cotton growing and to acquaint growers with the more technical aspects of the industry, the practice of delivering a series of illustrated lantern lectures throughout the main cotton centres has been continued during the season. Undoubtedly this is a most satisfactory way to present such information.

INSECT PESTS.

The fact that cotton growers generally prepared their seed-beds early had quite a bearing on the slight loss obtained by the usual pests during the early seedling stage. During November and December the Cotton Web Spinner (*Loxostege affinitalis*) was responsible for damage to cotton mainly in scrub areas, but the attack was short lived. In portions of the Calide, fairly serious damage occurred through invations of Corn Ear Worm (*Heliothis obseleta*) from heavily infested areas of pigweed and Bullhead, but swabbing with lead arsenate, molasses and water proved effective. Following the formation of a top crop after the good rain of March, considerable damage was caused by jassids and the various boll worms.

PUBLICATIONS.

The following bulletins and pamphlets were published in the "Queensland Agricultural Journal" during the crop year:—

Cotton Growing.

Cotton Culture.—W. G. Wells, Director of Cotton Culture and Senior Research Officer.
The Menace of Standover Cotton.—A. Nagle, Senior Instructor in Cotton Culture.
Grow Cotton.—R. W. Peters, Cotton Experimentalist.
Cotton Cultivation.—R. W. Peters.
Harvesting Cotton.—R. W. Peters.
Packing and Consigning Cotton.—R. W. Peters.

Cotton Entomology.

W. J. S. Sloan, Assistant Research Officer, Division of Plant Industry (Research):—

Cutworms in Seedling Cotton.
The Maize Trap Crop for the Control of Corn Ear Worm in Cotton.
Corn Ear Worm in this Season's Cotton Crop.
The Leaf Eating Pests of Cotton.

The Annual Report of the Cotton Research Station, by R. W. Peters, L. M. Hodge, and W. A. R. Cowdry, for the 1936-37 season, was published in the Annual Report of Experiment Stations, by the Empire Cotton Growing Corporation.

ACKOWLEDGMENTS.

The Principal of the Queensland Agricultural High School and College has co-operated during the season in relation to conducting an experiment in which the value of various fodders and Rhodes grass to precede cotton on a heavy black alluvial soil, is being studied.

The Agricultural Chemist has kindly detailed different members of his staff to analyse a large number of soil samples, and determine the moisture and nitrate nitrogen content of a series of plots on a fortnightly basis. The information obtained from such work is of marked value in the study of the problems relating to cotton culture.

W. G. WELLS,
Director of Cotton Culture and Senior Research Officer.

REPORT OF THE DIRECTOR OF FRUIT CULTURE.

Weather conditions throughout Queensland from the fruitgrowers' point of view were variable during the year. On the coast south from Rockhampton good spring rains, which greatly benefited banana, pineapple, citrus and other fruits were experienced. In the Central Division spring and summer were dry and hot and generally unfavourable. In the Granite country around Stanthorpe conditions were excellent until early January, after which the rainfall was insufficient for late crops.

Although prices naturally dropped during the peak harvests of many fruits, reasonable returns were, generally, well maintained. This fact is important, because so many people are dependent on the fruit industry, both directly and indirectly. For example, in the pineapple and banana sections alone there are 3,850 growers, the majority of whom employ outside assistance. Moreover, the industry provides one of the best fields for closer settlement within the State. Statistics show that, calculated on an average gross return per acre basis, fruit-growing is among the important wealth producing industries of Queensland. According to an analysis of figures compiled by the Registrar-General for the year 1936, the gross value of fruit and vegetables grown in that year was £1,535,860 from a producing area of 55,360 acres, or an average return of £30 per acre. At the same time, fruit is a costly crop to produce. It necessitates the use of fertilizer in large quantities, and in its most expensive form, costly cultivation and marketing equipment. The industries associated with the manufacture and supply of fruit cases and other necessities are naturally affected by a good or a bad year for fruit growers. A good average season, both climatically and financially has, therefore, a considerable and widespread economic importance.

Most fruitgrowers in Queensland, nowadays, are industrious and particularly keen to learn all there is to know about their business. They are realising more than ever that haphazard methods in their industry are gone for ever. Nothing less than the best is good enough, and noticeable effort is being made not only to produce fruit of high quality but to market it to the best advantage. In their efforts they are being aided by a keen and efficient team of field officers anxious and willing to assist. There is also evident a new spirit of great good will towards and a desire to co-operate with officers of the Department. This is expressed in the enormously increased demand for personal instruction in the orchard and by correspondence. It is also true that a much improved service is now being offered to growers by the Department. Advice offered now is chiefly based on practical knowledge gained from experiment and observation under local conditions.

The fruit industry is rising steadily in status, culturally, economically, and socially—in the broadest sense. With the inauguration of the Division of Plant Industry (Research) much important work, both experimental and demonstrational, is now in progress—and much more has been planned—as a consequence of close co-operation between the technical and field staffs of the Department. Included in this co-operative programme are further investigations into problems and practice relating to bananas, pineapples, citrus fruits, mangoes, tomatoes, avocados, Queensland nuts, beans, granadillas, grapes, and deciduous fruits.

The field staff of the Fruit Branch has become moulded into a keen and efficient team.

LEGISLATION.

Amendments to the Diseases in Plants Acts and Banana Industry Protection Acts were passed at the last Session of Parliament. Regulations made during the year included:—

(1) A Proclamation modifying the northern boundary of the Buffer Area south of which Bunchy Top is present.

(2) A Proclamation that the Pastoral districts of Moreton and Darling Downs be a Quarantine Area on account of Plague Grasshoppers, and a Regulation requiring specified measures of control to be applied by responsible bodies and persons.

(3) A Proclamation that the Stanthorpe, Killarney, and Warwick districts be a Quarantine Area on account of Fruit Fly.

(4) A Proclamation providing certain conditions attachable to the import of fruit at Coolangatta.

(5) A Regulation requiring specified treatment to be applied in Orchards where Apple Leaf Hopper is present.

(6) A Regulation providing for the removal from orchards of dead trees and wood liable to harbour or spread diseases or pests.

(7) Regulations under the Fruit and Vegetables Acts providing for modified Standards for Plums and Bananas.

COMMONWEALTH APPLE AND PEAR BOUNTY ACT, 1938.

As the Authorised Officer for Queensland under the abovementioned Act, applications for bounty, payable to growers only at the rate of 2½d. per bushel on all apples and pears exported overseas to destinations other than New Zealand, were considered by me from 70 applicants. All applications were allowed and the sum of £246 5s. 3d. was distributed in amounts ranging from 5s. 2d. to £20 4s. 7d. An amount of £3 14s. 9d. was left in the Fund.

ASSOCIATED OFFICES.

The many duties necessary in connection with the associated offices of Chief Plant Quarantine Officer under the Quarantine Act and State Supervising Officer (Fruit) under the Commerce Act were regularly performed.

As deputy for the Director of Marketing, monthly meetings of the Committee of Direction of Fruit Marketing and periodical meetings of the Sectional Group Committees were attended, and as chairman of the Banana Industry Protection Board the policy of the Board was carried into effect.

Whenever opportunity offered, personal contact was made with field officers stationed in country districts and their work and organisation inspected.

BANANAS.

The banana section of the industry benefited greatly from the seasonal conditions and, with the exception of low prices during the summer months when supplies were heavy, financial returns were very satisfactory. Production during the hot months of the year is always heavy and difficult to control from the marketing end. This position last summer was emphasised as a consequence of the large supplies of fruit of the "small" grade coming forward, following the comparatively dry year previously experienced. As a result of last summer's experience, it is evident that action will be necessary to raise the standard for bananas during the annual period of peak production. The industry has been subject to considerable fluctuation for several years past, and this fact has necessitated modifications of the regulations from time to time. It now appears to have become settled again and it is probable that the annual acreage will remain about stationary for some time. Growers have asked that during the period of peak production the marketing of the "small" grade shall be restricted.

In my last report, banana acreages were set out as 9,994 acres bearing and 3,461 acres not bearing, a total of 13,455 acres. During 1937-1938 this position varied very little. According to statistics compiled from returns of the agents of the Banana Industry Protection Board there is now an aggregate of 13,803 acres under bananas in the State. Of this area, 9,885 acres are described as bearing, of which 7,369 acres, or 75 per cent., are in good cultural condition. Of the 3,918 acres not yet bearing, 3,692 acres, or 92 per cent, are in good order.

In the course of the year applications were received for the planting of, approximately, 1,642,000 suckers, and 3,423 acres altogether were planted. An area of 2,600 acres of neglected and unprofitable banana groves was eradicated, and during the next twelve months it is anticipated 2,181 acres of plants of similar description will be destroyed. As, however, new plantings are estimated to cover 2,500 acres, the position of the industry will remain about the same.

The planting policy for the ensuing year was fully discussed at the May meeting of the Banana Board. It was decided that the policy in force for the previous year could not be improved upon, and on its adoption for a further period being recommended, it received the approval of the Minister. In compliance with requests received from some banana growers' associations, the Board has decided to give earlier consideration to the planting policy in future years, and declare the position for the succeeding season's planting during the month of March. This will enable intending growers to give early attention to the preparation of their land.

There has been the usual recurrence of Bunchy Top in South Coast areas, but generally it has not been so severe as in previous years. Beetle Borer is a serious pest of bananas, probably equal to or even more dangerous than Bunchy Top. It is pleasing to note, however, that many more growers are realising the value of systematic baiting and the destruction of spent stools as recommended by the Banana Board.

In the course of the year, in accordance with the powers contained in the Act, an examination of the books of banana sellers in the main towns from Brisbane to Gympie was made. The object was to determine whether the correct amount of levy was being paid to the Board. Several discrepancies involving considerable amounts were disclosed, and suitable action was taken.

It has been decided to revise the banana fertilizer experimental programme. The new trials are designed so that they are scientifically sound, and the results will be considered statistically by the Departmental biometrician. The experiments will be conducted by the Research and Fruit Culture Branches in co-operation, and an officer of the Banana Board has been seconded for full time duty thereon. The trials will commence early in the new financial year.

In the joint report of the Secretary (Mr. H. Crofts) and the Chief Inspector (Mr. H. J. Freeman) of the Banana Board, it is set out that some alterations in the boundaries of agents' districts have been made to ensure more efficient working and to absorb additional territory. These have resulted in the present districts numbering 14, as against 15 last year, and as against 16 the year before.

The districts now are as follows:—

District.	No. of Growers.	Area in Acres.
Cairns	82	271
Bowen	100	367
Rockhampton	89	480
Gympie	285	987
Pomona	184	1,226
Yandina	267	1,819
Palmwoods	328	1,182
Woodford	98	989
Dayboro'	116	821
Brisbane-Redland Bay	249	674
Beenleigh	269	1,508
Southport	150	1,010
Tallebudgera-West Burleigh	123	1,556
Currumbin	88	913
	2,428	13,803

Compared with last year these figures show a slight reduction in the number of growers in all districts, except Gympie and Beenleigh.

In computing the average production per acre, it is estimated that the total production in Queensland during the past 12 months (bunches and cases) was 531,300 cases from a bearing area of 9,885 acres. This would give an average of, approximately, 54 cases per acre, but when it is considered that 2,180 acres are to be eradicated in the near future (leaving only 7,705 acres of really commercial plantations) the average of first grade bearing areas would be considerably increased and would average, approximately, 69 cases per acre.

Last year's planting in order of area was:—

District.	Area Planted. Acres.
Beenleigh	540
Yandina	442
Gympie	340
Tallebudgera-West Burleigh	314
Southport	294
Pomona	273½
Dayboro	271
Palmwoods	250
Woodford	240
Brisbane-Redland Bay	176½
Currumbin	145
Bowen	62
Rockhampton	55
Cairns	21

The total number of inspections made (bananas only) was 11,786, making an average of 785 inspections a year for each officer. The official mileage travelled aggregated 72,475 for the year—or an average of 4,831 miles for each inspector.

By way of comparison, the acreage of bananas in New South Wales is approximately 17,935 acres, of which 3,897 acres were planted last season. The average production per acre is estimated to be, approximately, 65 cases and the total production during the past 12 months is estimated at, approximately, 900,000 cases.

In Queensland, the Cavendish variety is still the most favoured, while the popularity of the Mons Marie is increasing yearly. A shortage of planting material, however, permits only of a gradual extension of acreage of the Mons Marie variety.

The shortage of suitable virgin banana land is becoming more acute each year.

Methods of cultivation, fertilization, planting, and desuckering are matters which necessitate careful consideration by all concerned because of unforeseen risks brought about by seasonal conditions and the incidence of diseases of which the risk is ever present.

The standard of packing has been maintained, and the requirements of the bunch trade respecting maturity and marketing given close attention.

Fertilizer experiment plots have returned variable results, which have been recorded. The greatest interest in fertilizing practice is manifested, probably, in the near North Coast districts. Because of the scarcity of banana land, second and third-grade country has been brought under cultivation, and fertilizing is usually necessary as soon as the area is planted.

Road transport is constantly improving. Motor vehicles and better roads enable growers to market their fruit expeditiously each year.

The Future of the Banana Industry.—With the scarcity of first-class land for bananas, over-production in Queensland is not likely. The banana fly and the discoloration of the fruit by rust remain two factors which seriously impair the prospects of a big expansion in North Queensland. It is estimated that during next season approximately 2,500 acres will be planted, but against this more than 2,000 acres will be eradicated. Considering the position generally, it is thought that during the next twelve months the average returns received per acre will be such as to give satisfaction to those engaged in this industry. The days of extraordinary financial returns per acre have gone, apparently, and from available figures it is considered that from £36 to £41 net per acre should now be classified as a very fair average return.

The ripening of bananas by scientific means as against the old method of applying heat is doing much towards stimulating consumption. During the past year, more than ever before, it has become a definite opinion that the sooner the fruit is placed in the ripening room after being cut from the plant the better, as the flavour, colour, and the general ripening process are improved. Queensland growers close to ripening centres are taking full advantage of this fact.

Effect and Control of Pests and Diseases.—Constant efforts are being made to assist growers to control pests and diseases. From Coolangatta to Cooroy, a distance of approximately 150 miles, Bunchy Top occurs with more or less severity. Growers and Departmental officers are working in harmony to control this disease.

Leaf Spot is common throughout all the banana districts, affecting some areas much more seriously than others, and always appearing as a seasonal complaint. Trashing, timely desuckering, fertilizing, and bagging of bunches have been strongly recommended as practical suggestions to offset any damage from this plant disease.

Beetle borer is a serious pest in most areas, and both poisoned and fresh baits as measures for keeping this pest under control have been recommended persistently.

Thrips have been serious in some districts, but restrictions on the removal of plants from infested parts has localised this trouble to a large extent.

During the last planting season the virus disease classified as Heart Rot caused some alarm, and growers were advised to remove affected plants when the first symptoms became apparent.

The Veimama plants brought back from Fiji by the late Under Secretary, Mr. E. Graham, and subsequently distributed throughout the South Coast, have made rapid and satisfactory growth. Only a very small percentage have contracted Bunchy Top, i.e., 5 plants out of approximately 800. The bunches thrown are well shaped and of good quality. In almost every respect they resemble the Mons Marie, but there does appear to be a slight difference in the shape of the fruit and the actual set-up of the plant. Growers are very pleased with this variety, and are looking forward to increasing its numbers when sufficient planting material is available.

The work of the Banana Agents right through has been most satisfactory, and by their co-operation with the growers they have assisted the industry very greatly during the past year. In addition to bananas, they have at times been called on to advise on such crops as tomatoes, beans, peas, papaws, strawberries, and occasionally some citrus. All these crops represent interplantings in a banana plantation or adjacent land.

PINEAPPLES.

Pineapple production continues to expand at a fast rate. As stated in my last report, 830,000 cases were harvested in 1935-36 and 844,418 cases in 1936-37. For the year 1937-38 it is probable that 1,000,000 cases will be the record. Of the 1937-38 summer crop, factories processed 357,556 cases and 105,347 cases of fresh fruit were consigned to Southern markets. In addition, the local market is estimated to have absorbed 40,000 cases of fresh fruit, making an approximate total of 500,000 cases. The winter crop promises to equal the summer crop, of which factories have made preparations to process 350,000 cases.

Growers have arranged for the purchase of a half interest in a cannery.

The present stabilised factory price for fresh pineapples is £10 16s. 8d. a ton. From this amount the Committee of Direction of Fruit Marketing, which controls the distribution of factory fruit, deducts, by arrangement, £1 10s. a ton to cover freight and handling charges, leaving a net price of £9 6s. 8d. for the grower.

An experiment to ascertain the possibility of carrying fresh pineapples to the English market using a patent process was conducted in the course of the year. The Department and the Committee of Direction of Fruit Marketing co-operated with the inventor of the process in sending a test consignment of pineapples to England, but the condition of the fruit on being opened was reported as very disappointing, and only low prices were obtained for fruit in anything like saleable condition. In any case, the possibilities of the English market for fresh Queensland pineapples are not very hopeful at present, since there are other countries very much closer which can land pines there in better condition.

A census of the industry revealed that there are 1,422 growers farming an area of 5,885 acres. During the season it was proposed to plant a further 1,254 acres. A fair proportion of the existing area is, of course, planted under the older methods and are naturally low producing. The acreage so planted, however, is gradually going out of production. For new plantings according to improved methods a higher production is assured.

The Inspector of pineapple plantations (Mr. P. Mitchell) reports that weather conditions throughout the North Coast and Mary Valley were very favourable with good spring rains, followed by rains at regular intervals throughout the summer. Very heavy falls occurred in November and May, and caused severe soil erosion on farms on which no system of drainage had been practised.

As in former years, most of the crop was absorbed by the canneries. The fresh fruit market supplies, particularly in Sydney and Melbourne, were increased in comparison with previous years. This increase in price and in consumption may be due to some extent to improved economic conditions, but also it has been largely influenced by the improved quality of the product. A more general adoption of the cultural practices and fertilizing programmes recommended by the Department was undoubtedly an important factor in the achievement of this pleasing result.

Considerable loss was caused in southern consignments during March-April, through "water blister." Methods of control have been constantly kept under the notice of growers generally.

With the more general adoption of proper soil treatment and fertilizing, it has been observed that requests for inspection or information about the control of "wilt"—a major trouble in previous years—have been practically nil. Information is now sought chiefly on soil pH tests, sulphuring, laying out of areas, drainage, fertilizing, and "top rot" occurrence.

Plantations generally are showing a marked improvement from previous years, both in appearance and production.

By adopting the cultural and fertilizing practices recommended by the Department returns have been materially improved. Growers on areas that were previously considered to have been worked out are now producing from 500 to 800 cases an acre.

As an indication of the upward trend of the industry it may be stated that from Woombye, which has always been regarded as the chief North Coast pineapple centre, 167,777 cases of pineapples were loaded during 12 months ended May, 1938, compared with 109,281 cases in the previous year.

Growers in the Mary Valley district, as in other districts, are now realising that the old pineapple land will have to be utilised again for pineapple growing. Mainly in anticipation of this, trial plots were laid down at Amamoor and Dagun to demonstrate the economy of producing pineapples on old land, provided correct methods are applied. Despite severe drought in the early stages the growth results were very satisfactory.

Demonstration and trial plots, designed by Mr. Lewcock, and supervised by an officer of the Fruit Branch, have done remarkably well, and are already proving of great value to the growers in the respective districts. The 1936 plots were laid down with the main purpose of demonstrating what can be achieved by applying modern cultural and fertilizing practice to old as well as to new land. Incidentally, they were intended to supply definite data on costs of production, and actual production figures on an acreage basis. To date, these plots have been very successful, and have served as a valuable object lesson to interested growers. One of the plots at Woombye, from which a fair percentage of the fruit has been marketed, has every indication of producing at least 25 tons of fruit per acre; it is quite possible that the final weights may exceed that tonnage. The results from Departmental plots are already demonstrating that the utilisation of old land is quite a sound and profitable undertaking. This is of great importance to all pineapple districts, since it obviates the necessity for incurring the capital and working cost of new land.

1937 *Paper Mulch Trials.*—Following on results obtained by the use of paper mulch in the Beerburrum district during the 1936-37 plantings, it is apparent that the use of this material will provide the solution of the usual difficulties which arise from the use or reclamation of old pineapple lands. Trials were laid down during the 1937 planting season in the Nambour, Woombye, Palmwoods, Montville, Flaxton, Amamoor, and Dagun sub-districts. All plots, with the exception of one at Dagun, were laid down on old pineapple land. The results to date can only be described as astounding to growers. The value of selected planting material is also being demonstrated on some of the plots.

Drainage.—Soil erosion in pineapple plantations is a problem which has been seriously considered, and with a view of combating this evil, contour drains or complete sets of diagonal drains have been made in the experimental plots. Despite the fact that some of the plots were located in extremely difficult land, in respect of drainage and soil texture, the effect of the drains was remarkable. During the heavy downpours in November and May there was no wash in the plots at all, and it was shown conclusively that soil erosion on pineapple fields can be prevented by carefully surveying the contours of the land and laying out a complete set of surface drains.

Other Field Trials.—Iron spraying of pineapple plants has been carried out in the Mary Valley to overcome troubles caused by deficiency of this element, and it has been proved that monthly applications of a 2½ per cent. solution is necessary to obtain maximum results. Further trials are being carried out in the Nambour district with monthly applications at the above strength, on plants which have been planted in soils having the desired pH.

"Acetylene" trials to induce flowering are also being conducted, but results to date are incomplete.

Experiment Work.—The field work in connection with the field trial plots at Wamuran and Beerburrum planted 1936-1937 was taken over, and picking commenced in March, 1938. At Wamuran very satisfactory growth was made throughout, and the fruit being picked is of good size and type. The outstanding feature of this plot is its early maturity, other portions of the farm immediately adjoining and planted about the same time not yet bearing, nor are they of equal vigour and growth.

The Beerburrum plots were intended to demonstrate the profitable use, or otherwise, of these very poor soils. Paper mulch was laid down on both plots. Each was planted early in January, 1937, and picking commenced in March, 1938, and was in full swing in April. Many of the fruits weighed well over 5lb. This is better than any result previously recorded.

Further paper mulch plots were established at Glasshouse, Beerburrum, Moggill, and Manly during November, 1937, and in each case very satisfactory progress is being made.

This method of agricultural education, bringing as it does into close co-operation under actual farm conditions the scientific worker, field extension officer and the farmers, is returning good value for the comparatively small outlay entailed. The plots are all a source of interest, and are undoubtedly the direct cause of considerable improvement in local cultural methods. Other field work in connection with disease and soil treatment is in progress.

CITRUS.

Early spring rains are necessary for coastal citrus growers. In drier regions—such as Gayndah and Grantham—where irrigation is practised, a wet spring is not so important. In a good season, therefore, good crops set early. Citrus-growing is expanding steadily in the two inland districts mentioned, but the older groves on the coast are gradually disappearing.

One effect of the introduction of the citrus budwood scheme, under which the Department selects buds for nurserymen from special trees, is reflected in the increasing sale of citrus trees by Queensland nurserymen and in the lessening demand for importations from other States. In the course of the year 15,000 more bud-selected trees were sold by local nurserymen than in the previous year, indicating that growers are now ordering locally-raised trees with every confidence.

General.—In the metropolitan and South Coast pineapple areas, Inspector W. G. Hancock reports that the regular rainfall throughout the year was highly beneficial and resulted in fruit of large size and good quality for the summer crop. The prospects for the winter harvest were also assured.

The planting season was highly successful and one of the best in recent years. The favourable weather, coupled with a general adoption of improved methods of culture, has resulted in very rapid and healthy growth in the spring and early summer plantings.

Paper mulch is coming into general use. When properly laid it is conducive to better and earlier crops, less labour in weeding, and a lower production cost. The prospects for a heavy winter crop are bright.

In a summary of the year's activities, Mr. R. L. Prest, Instructor in Fruit Culture, and Mr. H. Collard, Assistant Instructor in Fruit Culture, report that beneficial spring rains were experienced throughout practically the whole of the citrus-producing areas, and satisfactory blossoming and fruitsetting was general. Later, dry hot weather caused some fruit-shedding and scalding.

In the Gayndah district good crops of grapefruit, oranges, and mandarins are being harvested. The winter lemon crop is light, but the present indications for the coming summer crop are good.

The standard of orchard work is generally high. Departmental instruction and experimental work has been appreciated and is reflected in improved soil and moisture conservation. In practically every orchard greenmanuring is the rule rather than the exception.

Grantham, Lockyer, and Murphy's Creek districts are producing good crops of oranges and mandarins. The prospects for commercial citrus production in these districts are very bright where irrigation is practicable and suitable soils are selected.

In the North Coast districts many of the older unproductive orchards have been grubbed out and are being replaced, to some extent, with plantings of selected trees and varieties. In the bearing orchards moderate crops of oranges and mandarins are in sight.

In the Howard-Burrum districts good average crops of oranges and mandarins set, but hot, dry conditions immediately following the first spring rains checked tree growth.

Market prices early in the season were very satisfactory for quality fruit; choice lines of grapefruit and navels from the Gayndah district realised high values. Unfortunately, this led to the colouring of immature and smaller fruits, which were difficult to clear and lowered the tone of the market generally. This fault was also reported from Melbourne in lines of Emperor and Fewtrel mandarins. The fruit was reported to be very tart, and waste developed in gassed lines.

Pests and Diseases.—Fungi diseases—such as melanose, black spot, and brown spot—are present in several districts, while seasonal conditions have generally favoured scale insects. In the drier districts red and black scales appear to be the dominant scales. The green orange bug has again been troublesome, and this season it has been recorded in coastal orchards in increasing numbers. Fumigation is gaining in favour. In practically every district crop losses caused by the depredations of fruit fly, yellow peach moth, green orange bug, and black passion vine bug have been reported.

Trial Plots.—At Tamborine Mountain experimental citrus plots, demonstrating the reconditioning of decadent orchards in that district, have been established. So far, it has been demonstrated that the application of fertilizer alone is of only small value unless attention is given to soil erosion, green-manuring, and correct cultivation.

On one plot comprising thirty fourteen-year-old Valencia trees—of which production in 1934 averaged one-half bushel and in 1935 three-quarters of a case per tree—wjere treated, with the result that the average tree production was raised to two and three-quarters cases in 1936, and to six and a-half cases in 1937.

In the Palmwoods district, where some hillside orchards are prone to soil erosion, the advantages of open grassed drains and special cultivation across the heaviest fall between tree rows to form subsidiary drains to carry surplus waters to the main drains as methods of prevention were demonstrated. The purpose of this project was to determine a suitable method of reducing erosion where contour draining in established orchards is more or less impracticable. During recent heavy rains there was practically no loss of soil where before the drains were made excessive erosion was occurring.

Citrus root-stock trials have been established at Lawnton.

The citrus budwood plot at Gayndah has continued to make good progress. From time to time check analyses of fruits from the plots indicate that their high standard has been well maintained.

DECIDUOUS FRUITS.

Deciduous fruit marketed during the twelve months totalled 24,200 tons, compared with 17,000 tons the previous year—an increase of 41 per cent. Apple exports oversea aggregated 35,370 cases—an increase of 9,148 cases, which included an additional 6,000 cases over last year's business in the Eastern trade.

Mr. H. St. J. Pratt, Senior Instructor in Fruit Culture, at Stanthorpe, reports that increased production did not, however, react entirely in favour of the growers, particularly during the periods of peak harvests. A medium crop always pays Stanthorpe growers better than a very large one, especially as trade channels for deciduous fruit are at present restricted, more or less, to the domestic demand.

Damage from hail was more severe than in the previous season.

Apples.—The apple crop was the largest for many years; 139,000 cases were marketed, as against 82,000 in the previous year.

All varieties in every orchard produced a full crop. The quality of the fruit was good, especially the Granny Smith variety. Considering the large increase in production, prices, although lower than last year's average, were satisfactory.

It is pleasing to report an increased demand for the Stanthorpe apples for export.

Grapes.—The spring of 1937 was very favourable to the growth of grape vines. The setting of the fruit generally was fair, and showed an improvement on that of the previous season.

The prices were lower than last season, but the dry, hot summer affected quality, which is usually high in Stanthorpe grapes.

An export trade is developing, and an aggregate of 2,187 cases was shipped. Hong Kong, Singapore, and Vancouver were the ports of consignment. The principal varieties were Black Muscat, White Servant, and Waltham Cross.

Stone Fruit.—There was a very large crop of stone fruit. Growers who thinned out early and well received satisfactory prices. It was brought home to growers very forcibly that the production of small stone fruit does not pay.

Two small experimental shipments of plums were made to the East, the varieties chosen being Santa Rosa, President, Grand Duke, and Pond's Seedling. Satisfactory reports were received as to the quality of the fruit and the excellence of the packing, but freight and other charges were so high that an expansion of this trade is problematical.

Vegetables.—The vegetable-growers and small crop producers generally had a difficult year. Early crops glutted the market. The prices for tomatoes were generally low. Factories did not process the usual quantity. Many new irrigation plants have been installed, and growers can see that the man with modern ideas of pest control and farming practice has a far greater chance of making his farm pay than the man who plants without correct preparation, fertilizing, or after-treatment of his crops.

Packing.—School packing instruction is now considered to be as much a part of school routine as history or geography. Evidence of the children's interest and keenness was shown at the Stanthorpe, Summit, and Amiens shows in numerous entries for packing competitions. The interest of the parents was shown in their readiness to make their packing sheds available for the classes, and to the school teachers who co-operated grateful acknowledgment is due.

East Malling Stocks.—Apple trees worked on to East Malling No. XII. stocks by the Department at Stanthorpe were distributed to growers in different parts of the district.

EXPERIMENTAL WORK.

Colouring experiments with tomatoes and citrus fruits were conducted. A detailed report of the results with the latter was printed in the *Queensland Agricultural Journal.*

In co-operation with the Committee of Direction of Fruit Marketing, an experimental shipment of pineapples was made to England. In conjunction with the Forestry Department experiments were conducted to test the value of Queensland pine thinnings as woodwool and case timber. The results were highly satisfactory.

Fruit exhibits were staged at the Brisbane Exhibition and the Sydney Royal Show. These exhibits created a lively interest in Queensland products.

TROPICAL FRUITS.

The popularity of tropical fruits is gradually increasing in Southern States.

To determine the suitability of certain grape stocks for coastal conditions, experiments have been initiated with a number of phylloxera-resistant varieties.

Avocados.—The avocado is becoming a popular fruit. The trees grow vigorously in Queensland, and, in view of the possibilities of avocado-growing developing into a comparatively important section of the fruit industry, provision has been made for the establishment of orchards on a sound basis.

Papaws.—Papaw production is steadily expanding, and the regular market demand strengthening.

Strawberries.—A record crop of strawberries is anticipated. Plantings during the season were heavier than for some time, and under favourable weather conditions the plants have made excellent growth.

Passion Fruit.—Passion fruit growing also is expanding rapidly, and has become a chief source of income for many producers. Except during a short period of peak production, prices, especially during the summer, have remained payable.

THE CENTRAL DISTRICT.

Mr. W. J. Ross, Senior Instructor in Fruit Culture, reports that weather conditions in the Central Division were variable and generally unsatisfactory for fruit production. Of the fruits of major importance, light to fair crops were harvested. Pineapple culture is extending in suitable coastal country. Gradual improvement in respect to general cultural practices is being maintained. Irrigation is practised where suitable and sufficient water is available. The use of fertilizers is becoming more general. When not misused—that is, in relation to the constituent needs of specific soils—results have convincingly demonstrated their value.

Tomatoes and papaws, which usually predominate among fruit consignments to southern markets, maintained a sound market position.

Mangoes.—The mango crop was very light, but present prospects are that the next crop will be much better. In years of normal cropping, a considerable portion of the production is despatched to southern markets, but on account of the poor bearing last season only a small quantity was shipped.

Other Fruits.—Custard apples, dates, carambolas or five corners, granadillas, strawberries, nuts, and melons are grown in the Central Division to a varying extent and in accordance with local demand.

THE BOWEN DISTRICT.

Bowen is dependent largely on the export trade of its agricultural and pastoral produce. Tomatoes are the chief fruit crop grown, with mangoes, pineapples, cucumbers, and pumpkins as subsidiary crops. Winter and early spring production of fruit and vegetables is the main interest. In recent years severe attacks of pests and diseases have reduced the tomato yields, and in the past year production was 100,000 cases less than that of the previous year.

Pineapples.—Pineapple planting is expanding rapidly. The prospect of a cannery at Bowen has stimulated interest in the industry. Seven Departmental experiment and demonstration plots have been established in the district, and through them, together with plant selection and spraying tests, growers are kept well informed on progress made in the solution of local cultural problems.

Mangoes.—The Bowen Apple or Kensington type of mango is increasing in popularity. This is a rosy, yellow, fibreless mango of delicate flavour. It grows well in the dry climate of Bowen. If grown in wet regions it loses its beautiful colour and has a much higher water content. The progenitor, a "grandparent," of this variety, although sixty years old, is still bearing large crops. The type has been fixed by at least eight generations of selection, and the present-day seedlings are coming about 80 per cent. true to type, compared with about 20 per cent. of the old original tree.

Cucumbers.—Cucumber growing is a profitable sideline for the Bowen producer, and the earliest spring deliveries find a ready market in the south.

Other Fruits.—Bananas, papaws, citrus, melons and granadillas, and other tropical fruits are only grown for local use.

Seeds of Ceara rubber have been imported from Ceylon and distributed.

THE NORTHERN DISTRICT.

Mr. S. E. Stephens, Instructor in Fruit Culture, reports that in some of the drier regions in North Queensland—such as the Charters Towers district and the district between Kuranda and Mareeba—irrigation is, wherever possible, becoming a general practice.

Citrus Fruits.—The Cooktown citrus crop for last season was a light one. Because of an excessively dry spring and summer in that area, the fruit now maturing will be very much lighter. Prices on the Cairns market were maintained at from 8s. to 11s. per case.

In several orchards in the Cardwell district a good second crop was harvested during September. This brought up to 15s. per bushel at Townsville. The 1938 crop is both light and late.

The Charters Towers crop was on the Townsville and western markets up to November, and growers have had a successful season. Damage was caused by grasshoppers in the citrus orchards of the Pentland district during February and March. Young trees were completely defoliated and the younger wood largely stripped of bark. This has affected the crop considerably.

Pineapples.—Harvesting of the summer pineapple crop in the Cairns area commenced during October. The crop was comparatively light, and good prices prevailed for good-quality fruit. In the Rollingstone and Magnetic Island districts the excessively dry spring retarded flowering. The crop was also a small one and matured rapidly.

Bananas.—Banana-growing is still very restricted throughout the North. Several small areas planted last year in the Clump Point district are now in production, and good fruit is being marketed from this area. The Cape Tribulation area is still producing good-quality fruit.

Mangoes.—The mango crop during the year was fair; good varieties were profitably sold. Harvesting on the coast commenced in October and extended to late January, when heavy rain caused the last of the crop to fall.

Granadillas.—The granadilla crop of 1937 was curtailed by the dry conditions, and very little fruit was available after the end of July.

Papaws.—Papaws have been in plentiful supply on local markets, and quality has been good.

Litchis.—During 1937 both seedlings and worked trees flowered profusely in August and set big crops, which ripened during November and December.

Grapes.—Grape crops in the Charters Towers district were heavy and of good quality. Crops up to 1¾ tons per acre were reported. Royal Ascot and Muscatel varieties are apparently the most suitable for this area.

Passion Fruit.—Passion fruit produced in the Koah area found a ready demand in Cairns during November, and sold at 10s. to 13s. per half-bushel case. Growth of vines was rapid, and fruit was harvested in ten months from planting the seed.

Minor Tropical Fruits.—Minor tropical fruits were all affected by dry weather, and the fruit produced was of medium quality.

Tomatoes.—Tomatoes are grown fairly extensively in nearly all districts of the North. The main harvest is from July to October. In the drier areas, irrigated crops were very productive.

In the Koah district, at an altitude of about 1,000 feet, tomatoes are produced from April to December. Most of the crops are irrigated. Cabbages are grown extensively there under irrigation.

On the Atherton Tableland there has been a considerable expansion in French bean growing.

A successful season of production and sales was the general experience in the Charters Towers district.

Mangoes.—Investigations included in the year's programme of mango research work were:—(*a*) Listing and study of varieties; (*b*) propagation studies; (*c*) root distribution and fertilizer element trials; (*d*) pruning; (*e*) alternate bearing; (*f*) production recording.

TOOWOOMBA DISTRICT.

Mr. A. M. Richardson, Plants Inspector, reports that in the Toowoomba district climatic conditions in the first half of the year were very unfavourable for fruitgrowing and market gardening. Better weather has been experienced in the second half of the year, the month of May being abnormally mild and wet.

Old and unthrifty citrus groves are being replaced with more suitable varieties. Market gardening is carried on very extensively with bore water irrigation.

Below the range good crops were general, but the hard conditions prevailing in the earlier part of the year resulted in very poor production from unirrigated fields. Most of the citrus fruits and grapes are marketed in Toowoomba.

At Roma, Orallo, Mitchell, Miles, Condamine, and Columboola good grapes and citrus fruits are being produced. Oranges are of exceptionally good quality. Planting of new areas in suitable localities is proceeding steadily, the navel orange being chiefly favoured. Where suitable and sufficient water is available for irrigation, success in citrus fruit production is assured.

Date Palms.—The possibilities of establishing date palm groves is being investigated, and experiment areas have been planted.

THE WARWICK DISTRICT.

Mr. C. Schindler, Plants Inspector, reports that hail damaged a proportion of the apricot crop in the Warwick district, but the fruit which escaped was of good quality and realised high prices. The grape crop was also satisfactory.

Pest Control.—Fruit flies were trapped towards the end of September in lemon and mulberry trees. Because of a late frost few loquats matured; some of these were found to be infested with fruit fly early in October. The commercial apricot crop, of which picking was over early in December, was practically free from fly. Some parts of the district were practically free from fly infestation until late in January. In February, fruit-fly larvæ were found in walnuts and in the fruit of the kei apple, and flies were bred out from both these hosts. This pest does not seem to breed commonly in Cape mulberries, but in one case this is suspected.

Control methods were generally successful, and infestation was much lighter than in the previous season in spite of more favourable weather conditions. This was probably due to several causes, the most obvious being the scarcity of loquats and the early trapping in suitable localities.

San José scale is now well under control by the compulsory winter spray. Brown olive scale was observed occasionally.

Curly leaf of both apricot and peach also was observed in places. In the preceding summer one orchard was severely affected with apricot scab, but this was effectively controlled with Bordeaux mixture, and this season the fruit was free from blemish. Plums affected by bacterial blight were observed on several occasions and appropriate advice on control given.

The coon bug (Oxycarenus) which was very troublesome last summer was much less common, and there was no recurrence of the caterpillars which invaded one area last February.

White wax is the most serious pest of citrus trees in this district, and control is difficult, as many native and ornamental plants are infested. Bronze and larger horned citrus bugs were observed, but their incidence did not seem to be quite as severe as in preceding years. Red scale and white louse also occurred in places.

The chief trouble with fruit from the Granite Belt early in the season was Brown Rot, and until the end of February very little fly-infested fruit from this district was found and no fruit was condemned on account of Codling Moth.

A considerable number of stone fruit trees (mostly peaches) growing wild along railway lines, roads, and watercourses were destroyed.

Walnuts.—Walnut trees of several varieties were found growing vigorously and producing good crops under suitable conditions in this district, and the publicity given to the possibilities of this crop has aroused interest in it. Unfortunately, most of those interested seem to prefer planting seedling trees in preference to the more expensive worked trees of named varieties, which bear early and produce large crops of good quality nuts. Fruit fly and bacterial black spot affect the walnuts occasionally.

FRUIT PACKING.

Mr. J. H. Gregory, Instructor in Fruit Packing, reports a considerable improvement in the preparation of market consignments, and increased interest in packing instruction generally. School packing classes are held regularly in fruit-growing districts, and pupils have gained a marked proficiency in this important aspect of fruit marketing.

METROPOLITAN MARKETS.

The Senior Markets Inspector at Brisbane (Mr. A. Person) has reported a very busy year. Generally, very little disease was observed in Queensland-grown fruit and vegetables, although potato moth was bad at times. Stanthorpe fruit, in particular, was very free, in comparison with the experience of former years.

Potatoes from Southern States were at times seriously affected by blight and tuber moth.

A considerable improvement in the general "get up" of the fruit marketed was observed. This is a matter to which considerable attention is being given, and growers are reaping the benefit in better returns.

A general return of fruit and produce inspected, and quarantine and commerce goods for the year is submitted herewith.

PUBLICATIONS.

Weekly contributions have been made to the *Weekly News Bulletin* on topical subjects, and each issue of the *Queensland Agricultural Journal* has also contained a large volume of cultural information. Considerable time has been devoted to the preparation of a volume on horticulture for inclusion in the *Queensland Farmer's Handbook* series, and which has now reached the stage of final draft, and will be ready for publication at an early date.

Publications issued from the Branch in the course of the year—*Tomato Culture; Green Manuring the Orchard; The Mabolo; The Avocado; The Granadilla; Grapefruit; Marketing Strawberries; The Sapodilla; The Papaw, Harvesting, Packing, and Marketing; The Choko; The Egg Plant; Cucumber Growing; The Planting of Bananas; The Rose Apple; Walnut Culture; The Cape Gooseberry; Lettuce Growing; Cabbage Growing for Market.*

H. BARNES,
Director of Fruit Culture.

INTERSTATE EXPORTS—YEAR ENDING 30TH JUNE, 1938.

——	Bananas.	Passions.	Citrus.	Pines.	Tomatoes.	Strawberries.	Grapes.	Mangoes.	Egg Fruit
	Cases.	Cases.	Cases.	Cases.	Cases.	Packages.	Cases.	Cases.	Cases.
Brisbane	13,714	..	48	4,138	16,673	362	..	10,414	..
Clapham	162,643	5,791	18,819	310,201	389,107	10,779	5,043	14,266	673
Wallangarra	3,491	253	208	3,082	104,613	57	21,719	130	4
Rockhampton	1	88	100	1,552	3,828	..	..	66	..
Bowen	715	..	17	17,301	199,608	..	..	22,265	..
Townsville	..	..	..	2,485	3,688	..	..	2,469	..
Cairns	19	..	..	..	..	..	..	..	..
Total Exports	179,848	5,944	19,075	317,421	510,393	11,198	26,762	24,810	677

NOTE.—Totals made up of Brisbane, Clapham, and Wallangarra only.

—	Various Fruit.	Melons.	Bird and Grass Seed.	Plants.	Pumpkins.	Potatoes.	Maize.	Onions.	Peanuts.
	Cases.	Bags.	Bags.	Packages.	Bags.	Bags.	Bags.	Bags.	Bags.
Brisbane	635	..	36,132	969	62,033	598	20,445	24,064	96,875
Clapham	53,824	1,685	1,071	495	74,224	148	43,333	7,383	1,093
Wallangarra	51,328	174	14,584	78	1,709	390	280,132	857	31
Rockhampton	409	..	..	..	..	..	..	..	..
Bowen	3,008	..	..	..	32,288	281	..	..	..
Townsville	597	..	..	..	..	..	..	..	..
Cairns	11	..	..	92	..	..	190,251	..	6,189
Total Exports	105,787	1,859	51,787	1,542	137,966	1,136	343,910	32,304	97,999

—	Arrowroot.	Ginger.	Tobacco.	Cocoanuts.	Cane.	Cucumbers.	Chillies.	Vegetables.	Garlic.
	Bags.	Bags.	Packages.	Bags.	Packages.	Packages.	Cases.	Packages.	Packages.
Brisbane	9,981	16	17,287	..	..	3,356	..	8,935	98
Clapham	447	134	10	13	2	22,543	296	76,089	..
Wallangarra	..	..	..	3	..	581	..	7,929	..
Rockhampton	..	..	..	..	..	..	..	..	..
Bowen	..	..	..	..	..	5,846	..	329	..
Townsville	..	..	..	..	..	..	..	..	..
Cairns	..	..	1,102	..	..	..	..	..	..
Total Exports	10,428	150	17,297	16	2	26,480	296	92,953	98

INTERSTATE IMPORTS.

—	Fruit.	Potatoes.	Vegetables.	Plants.	Onions.	Nuts.	Garlic.	Swedes.	Seeds.	Tobacco.	Maize.
	Cases.	Bags.	Packages.	Packages.	Bags.	Packages.	Packages.	Bags.	Packages.	Packages.	Bags.
Brisbane	675,373	198,403	7,387	344	44,936	97	..	17,547	..	..	..
Clapham	324,414	68,051	9,802	418	765	17	..	31	1,184	55	3,156
Wallangarra	85,445	34,325	1,428	774	3,221	..	..	..	12,155	69	..
Rockhampton	9,903	29,586	921	10	7,521	..	..	..	..	..	..
Bowen	7,991	3,412	3,830	1	976	..	..	..	..	..	..
Townsville	45,725	46,482	1,448	65	12,705	97	..	972	..	..	..
Cairns	43,757	30,696	2,210	24	6,628	..	..	459	83	..	..
Total Imports	1,085,232	300,779	18,617	1,534	48,922	114	..	17,578	13,339	124	3,156

NOTE.—Totals made up of Brisbane, Clapham, and Wallangarra only.

EXPORTS UNDER COMMERCE ACTS—1937-38.

Fruit.	Vegetables.	Plants.	Seeds.	Cane.	Nuts.
40,771 cases.	696 packages.	12 packages.	164 packages.	1 package.	4 packages.

IMPORTS UNDER QUARANTINE ACT.

1937-38.

Seeds.	Beans.	Ginger.	Chinese Goods.	Dates.	Tapioca.	Coffee.	Plants.	Nutmegs.	Rice.	Pepper.
Packages.	Packages	Packages.	Packages.	Boxes.	Sacks.	Sacks.	Packages.	Boxes.	Packages.	Sacks.
3,409	4,073	816	664	20,044	9,094	1,812	275	423	7,761	998

Cocoanuts.	Spices.	Tanning.	Des/Cocoanut.	Nuts.	Peanuts.	Cocoa.	Hay.	Linseed.	Insect Parasites.	Sugar Cane.
Sacks.	Packages.	Packages.	Chests.	Packages.	Sacks.	Sacks.	Packages.	Sacks.	Packages.	Package.
690	428	1,230	2,089	2,486	31	180	612	123	3	1

Straw Packings.	Lentils.	Tamarinds.	Herbs.	Cotton Seed.	Grapes.	Flour.	Cow Peas.	Figs.	Parcel Post.	Timber.
Packages.	Packages.	Packages.	Packages.	Packages.	Cases.	Sacks.	Sacks.	Boxes.	Packages.	Pieces.
29	105	40	60	10,510	30	59	103	1,982	224	44,566

Bamboos.	Rattans.	Fishing Canes.	Tool Handles.	Umbrella Sticks.	Tea Chests.	Willows.	Furniture.	Staves.	Timber.	Bamboo Rakes.
Bundles.	Bundles.	Package.	Packages.	Packages.		Bundles.	Pieces.		Logs.	Packages.
59	3,296	1	3,950	20	8,326	232	108	549,207	1,210	2,079

Hockey Sticks.	Display Stands.	Bamboo Blinds.	Walking Sticks.	Chair Seats.	Baskets.	Wood Curios.	Billiard Cues.	Timber.	Cigar Box Timber.	Articles of Wood.
Packages.	Packages.	Packages.	Packages.	Packages.	Packages.		Packages.	Cases.	Packages.	
164	1	36	2	89	1,159	12	1	3	13	23

Boxes.	Alarm Tills.	Thermometers.	Sewing Machines.	Ping Pong Sets.	Racquets.	Polishing Blocks	Cricket Bats.	Fishing Rod Timber.	Timber.
				Packages.	Packages.	Packages.	Packages.	Packages.	Bundles.
20	2	4	279	6	1	1	4	69	9,687

Hat Blocks.	Shingles	Sea Grass.	Cycle Rims.	Cotton Standards.	Buttons.	Coat Hangers.	Guns.	Mouldings.	Timber.
Packages.	Bundles.	Bales.	Packages.	Cases.	Cases.	Packages.	Cases.	Packages.	Super Feet.
2	250	6	4	1	10	4	44	1	1,744,602

A. PERSON, Senior Inspector Diseases in Plants.

REPORT OF THE DIRECTOR OF DAIRYING.

Seasonal adversity was general during the first half-year, but heavy summer rains fell over all the dairying districts of the State. The increase in production which naturally followed was maintained for the rest of the year, with the assistance of beneficial autumnal showers. Fortunately, the fear of the recurrence of ephemeral fever was unfounded, although some suspected outbreaks were reported. In no instance was an outbreak diagnosed as fever.

A new butter factory was opened at Jandowae; the rebuilding of the largest factory in North Queensland at Malanda is nearing completion; while numerous improvements have been effected at other factories throughout the State. A cheese factory at Pittsworth also has been rebuilt.

Queensland factories have again been successful in dairy produce competitions, both in Australia and overseas.

Butter Quality.

The quality of butter has shown a great improvement.

The Butter Board, which last year took over the control of butter sales in the Greater Brisbane area, has carried out its responsibilities satisfactorily and has experienced little difficulty in providing the local market with choice butter.

The patting is done on premises owned by the Board, and all butter submitted for the metropolitan market is tested for composition and quality, and passed by the grading inspectors of this Branch.

Butter Production.

The quantity of butter manufactured was approximately 114,691,039 lb.

The following table shows the monthly production of butter during the period:—

Butter Production, 1937-38.

	lb.
1937—	
July	5,763,100
August	5,386,701
September	5,695,432
October	5,838,723
November	9,195,559
December	12,483,893
1938—	
January	13,345,393
February	13,975,418
March	11,807,508
April	11,712,859
May	10,119,613
June	*9,366,840
Total	114,691,039

* Estimated.

Markets.

Queensland exported approximately 66 per cent. of its output, most of which went to Great Britain. Approximately 5 per cent. was sold interstate. Prices obtained throughout the season were satisfactory and, combined with the increased production, resulted in a record value to the State.

Grading of Butter.

The following table, which indicates the quality of the butter graded, has been received from the Commonwealth Dairy Branch:—

Butter, Salted and Unsalted.

Butter Graded for Export—including pats and tins.

Month.	Choicest boxes.	First boxes.	Second boxes.	Pastry boxes.	Total boxes.
1937.					
July	26,560	22,685	2,915	155	52,315
August	23,520	24,620	4,552	273	52,965
September	26,013	28,078	4,783	427	59,301
October	28,373	23,234	5,123	268	56,998
November	60,054	28,417	6,916	295	95,682
December	137,200	45,513	12,792	57	195,562
1938.					
January	113,465	53,467	17,405	94	184,431
February	120,374	78,019	25,845	816	225,054
March	139,415	47,088	16,297	514	203,314
April	91,120	42,974	10,517	183	144,794
May	91,729	41,660	7,509	233	141,131
June	80,849	30,082	6,244	781	117,956
Grand Total	938,672	465,837	120,898	4,096	1,529,503
Per cent.	61·37	30·45	7·90	·28	

In addition, 206,586 boxes were graded by State officials for the metropolitan market which, if added to the figures above, would increase the percentage of choice butter.

CHEESE PRODUCTION.

The production of cheese was, approximately, 12,970,605 lb. for the year—an increase of 5,198,679 lb. over the previous year. The quality also has improved.

The following table shows the monthly production of cheese during the period:—

CHEESE PRODUCTION, 1937-38.

	lb.
1937—	
July ..	755,446
August	769,623
September	827,175
October	857,531
November	1,037,651
December	1,220,842
1938—	
January	2,247,230
February	1,272,615
March	1,110,202
April	994,646
May ..	*879,321
June ..	*998,323
Total	12,970,605

* Estimated.

CHEESE GRADED FOR EXPORT.

The following table, received from the Commonwealth Dairy Branch, indicates the quality of the cheese graded:—

Month.	Choicest crates.	First crates.	Second & Third Crates.	Total Crates.
1937.				
July	..	737	772	1,509
August	..	676	558	1,234
September	240	1,705	1,126	3,067
October	..	1,188	840	2,028
November	3	1,136	1,626	2,765
December	8	1,748	2,565	4,321
1938.				
January	..	1,461	2,248	3,709
February	..	2,003	3,404	5,407
March	45	2,032	4,438	6,515
April	78	855	3,063	3,996
May	88	432	3,052	3,572
June	..	639	2,176	2,815
Grand Total	462	14,608	25,868	40,938
Per cent.	1·12	35·68	63.2	

NOTE.—Processed cheese and cheese packed in jars or tins not included in this table.

QUALITY OF CREAM.

In the early portion of the year conditions were unfavourable for the production of a high-grade cream, but after the summer rains a great improvement was apparent, except during a short period of oppressive weather.

Cream routes for all districts have been gazetted with the object of improving transport conditions from the farm to the factory.

DAIRY RESEARCH.

The Dairy Research Laboratory continued to render valuable assistance to the industry. In July, the second advanced school of dairy science was conducted at the laboratory. Eight trainees selected from the staffs of factories in different parts of the State were given a month's intensive instruction in bacteriology and chemistry. This was again a great success, and it is hoped to make the school an annual one.

REBATE SCHEME.

The Dairy Cattle Improvement Rebate Scheme, under which rebates of railway freights are granted to dairy farmers purchasing young bulls whose dams have qualified for entry into the advanced registers of the respective herd books, was continued during the year. Purchasers numbering 78 benefited to the extent of £293 19s. 9d. by way of rebates. This scheme has been of great assistance to farmers desiring to improve the production of their herds.

PURE BREED PRODUCTION RECORDING.

Breeders have been enthusiastic in submitting their cows to be tested for entry into the advanced register of the various herd book societies. During the year 183 animals were successful in qualifying.

GRADE PRODUCTION RECORDING.

The severe drought experienced during the previous two seasons and the beginning of the season under review made farmers reluctant to commence testing, with the result that the scheme was not availed of to the extent that it deserves.

The total number of herds submitted was 253. If Queensland is to succeed as an exporting State, farmers must give greater attention to improving the productions of their herds by continuous testing and the culling of all unprofitable cows.

FACTORY RECORDS.

The Inspector of Accounts audited the books of various butter associations during the year, and the balance-sheets show an increase in the cost of manufacture due to the lower production, but the average price paid was 12·19d. per lb. butter-fat.

DAIRY CATTLE IMPROVEMENT ACT.

Nine field days were organised and successfully conducted at the following centres:—Manyung, Kumbia, Crawford, Abbeywood, Wheatlands, Dayboro, Mount Mee, Kalangarra, and Crohamhurst.

Contact is being maintained with local dairy committees by forwarding papers for discussion periodically.

VETERINARY SERVICES.

The Department has veterinary surgeons appointed under the Dairy Cattle Improvement Act stationed in the chief dairying districts of the State. These officers are in charge of the testing under the Tubercle-free and Abortion-free Herd Schemes, in addition to giving their services in respect of the general health of dairy stock. Their services have been in great demand by dairy farmers, who are now paying greater attention to this section of animal husbandry.

G. H. E. HEERS,
Director of Dairying.

STAFF REPORTS.

(1) DAIRY RESEARCH.

Work proceeded normally throughout the year. Many farms and factories were visited, and experimental work was carried out in the laboratory.

Butter.—The officers of the laboratory both in Brisbane and Toowoomba have been assisting the butter industry in a number of ways. The work of bacteriological and chemical surveys of butter factories was continued, and there are few, if any, factories now that have not benefited by these visits. Improvements in the technique of manufacture, the hygiene of the factory, the quality of the water supply and in the quality of the butter have resulted from this work. Factory surveys have shown also that the technique of butter manufacture is undergoing a quick change towards the vacuum treatment of cream. Just as the flash regenerative pasteurising machines ousted the batch pasteurisers, so the vacuum machines are now displacing the regenerative pasteurisers. At the present time approximately 50 per cent. of our factories are using vacuum treatment.

Butter Quality.—There was a vast improvement in the quality of butter throughout the year. This indicates the influence of good and bad seasons, as the drought seriously influenced the quality of cream and butter during the previous year. The defects in butter have been mainly associated with manufacturing faults. Evidence is increasing each year to show that badly worked butter is associated with many of the defects that occur.

Many samples of butter were examined in the laboratory, and the results indicate that hygienic methods and efficient pasteurisation is being carried out in most of our factories.

Factory Water Supplies.—Much attention has been given to water supplies at butter factories. This work has necessitated visits to the factory sites, in addition to laboratory investigations. It has been found that there are big differences in the composition and quality of the raw waters of the factories. Treatment has effected improvements in many supplies, and recommendations have been made for the better storage of water in the factories. Chlorination of water has been very effective, and this treatment has been carried out together with coagulation, sedimentation, and filtration. Each water has been treated according to its determined properties. The ultra-violet light treatment of water has been in use in one factory for more than twelve months, and is giving satisfactory results. Further attention will be given to water supplies this year, for it is realised that the quality of water constitutes a very important item in regard to the keeping quality of butter.

Butter Standardisation.—This service which has been instituted to assist those factories which at present have not a laboratory of their own, has now been in progress for nearly twelve months. The results are very encouraging, and the participating factories have shown that it is possible to consistently make a butter of good constant composition.

During this period 859 samples of butter have been analysed for this work, and factories assisted by visits of officers. The following figures indicate the average analysis of the butter from one factory participating in the scheme:—Fat, 82·22 per cent.; moisture, 15·67 per cent.; salt, 1·44 per cent.; and curd, 0·67 per cent.

These are excellent figures, which indicate the possibilities of standardised control of manufacture. The Royal National Association included a competition along these lines in last year's programme and this laboratory assisted in judging the exhibits.

Cheese.—Lactic cultures for cheesemaking have been forwarded to many cheese factories. These cultures have been subjected regularly each week to vitality tests. Laboratory work on starters has been carried out to find the strain of lactic acid organism that is best suited to Queensland conditions. Cheese factories have been visited throughout the year, principally by the officer stationed in Toowoomba. An additional officer will be sent to Toowoomba this year to assist the cheese industry.

Dairy Waste.—An inquiry has been made into methods of disposal of dairy waste water from butter and cheese factories. So far, it appears that little serious trouble has been encountered by our factories in this matter, owing largely to our natural advantages in having large areas of land available and large tidal rivers. It will be a more serious matter, however, in years to come when dairying centres become more thickly populated. A report on the disposal of waste water from our Queensland factories is in course of preparation and will be published during the year.

Farm Problems.—Assistance has been given to many dairymen in regard to troubles arising with milk and cream. Most complaints were met with in summer time, when lack of cooling and non-sterilisation of utensils were found to be the major factors in the deterioration of dairy products.

Dairy Schools and Extension Work.—During the year another successful Dairy School was held, when eight men from various butter factories were given a course of instruction in the principles underlying the successful handling, manufacture, and marketing of dairy produce. The school extended over the month of July and consisted of lectures, laboratory work, and visits to places of industrial interest, with an examination at the end of the month.

Other extension work has been carried out per medium of the "Queensland Agricultural Journal" and the "Weekly News Bulletin." Lectures to farmers have also been delivered by various members of the staff.

A visit to the dairying districts of North Queensland was made during the year, when surveys of the butter factories and lectures to farmers and school children were carried out. It was pleasing to note the improvements that have been made in our northern factories, and to see choice butter being made in the tropics. A feature of the north is the excellent supply of running water on most dairy farms, a factor so necessary for successful dairying.

Staff.—There were no additions to the staff during the year. All members carried out their work well.

O. St. J. KENT,
Senior Dairy Technologist,
Dairy Research Laboratory.

(2) FACTORY ACCOUNTS.

The principal duties during the year have again been in connection with cream transport.

Inspections of accounts have been undertaken in conjunction with Drought Relief Scheme.

Factory balance-sheets revealed that, owing to a fall in production, costs showed a rise, but the average pay for the State was maintained at over 1s., being actually 12·19d.

Statistics showing the result of the grading of the dairy produce of each individual factory in the State have been recorded.

Inquiries into the economic aspects of proposals for the erection of new butter factories have been undertaken.

G. B. GALLWEY,
Inspector of Factory Accounts.

(3) HERD RECORDING.

Although the year under review has been very favourable in most of the dairying districts, the effects of the severe drought experienced during the previous two years were still felt by many farmers. This, no doubt, coupled with the unfavourable weather conditions early in the season is, to a great extent, the reason why herd recording has received very little added support during the year under review.

Having been on drought rations for a long period, dairy stock took several months to improve in condition, and very few inquiries came to hand during the first half of the year. However, as the season improved, many new herds were submitted, and the total number increased to 253 as against 239 last year.

Herds were submitted from all dairying districts in the State, the districts being as follows:—

	Herds.
Darling Downs	36
Moreton	45
Wide Bay	46
Burnett	55
Central	37
North Queensland	34

A total of 8,095 cows were tested, while the number of tests carried out was 18,424.

Because of the fact that most of the herds were submitted during the latter half of the year, the number of completed production returns—1,909—is comparatively low.

The average yield of those completed shows a return of 148 lb. of butter-fat which, although an improvement on last year's figures of 134 lb., is still below that of normal years, but it must be borne in mind that the figures are computed from records partly obtained during the drought period.

The average production on the Darling Downs was 172 lb. per cow, indicating that, given a fair season, this is one of our best dairying districts. Although regarded by many as a district of unreliable rainfall, it recovers very quickly and the returns per cow, particularly during winter, are considerably higher than those of any other district in the State.

Second to the Darling Downs is North Queensland, which shows an average of 158 lb. butter-fat per cow. These figures are practically all from the Atherton Tableland. This district is generally favoured with a good and consistent rainfall, but during the winter months it is noted that the yield declines considerably.

The summary indicates that 14 per cent. of the cows failed to produce 100 lb. butter-fat, while approximately 44 per cent. showed a production of between 100 and 150 lb., and 10 per cent. produced between 200 and 250 lb. butter-fat.

The highest average production recorded in a herd was 234 lb. butter-fat, while the highest individual return from a cow was 367 lb. butter-fat.

The average per cent. of butter-fat per cow was recorded at 4·16 per cent., and, although this has no particular bearing, it is interesting to note that this figure remains practically constant from year to year.

Of the total number of herds submitted, 129 were tested by the staff in Brisbane, while 124 herds were tested by dairy inspectors and butter factories.

Dairy inspectors carried out testing in Atherton, Daintree, Mackay, Biloela, Wowan, Mundubbera, and Bundaberg, while the following butter factory associations also carried out testing:—Southern Queensland, Logan and Albert, Caboolture, Maleny, Queensland Farmers, Downs, Chinchilla, and Warwick.

It is regretted that the Herd Recording Scheme, as operated by the Department, is not being availed of to a far greater extent. During the year 1933-34 some 982 herds were submitted for testing, but, since then, a gradual decrease has taken place, until last year when 239 herds, the lowest for many years, were submitted.

Apparently, our dairy farmers do not yet realise the importance of the work which is rapidly gaining ground in other Australian States, New Zealand, and all European butter-producing countries.

If herd recording were practised more seriously in Queensland, it is considered that an increase of 50 lb. of butter-fat per cow could be accomplished within a few years. Taking the number of dairy cows at 500,000, this would, at the round figure of 1s. per pound, bring an additional income to the State of £1,250,000.

The records of many herds which have been under test for a number of years show that this can be done, and their owners are definitely improving the standard of their herds. Testing, culling, and breeding, in conjunction with better feeding, is the only way to improve the conditions of our dairy farmer. Our competitors in all parts of the world are working along these lines, and it is time for us to appreciate more fully the material advantages to be gained by following their example.

L. F. ANDERSEN,
Instructor in Dairying.

SUMMARY OF HERD RECORDING.

YEAR 1937-38.

District.	Number of Herds Tested.	Number of Cows Tested.	Number of Samples Tested.	Production Returns Computed.	Average Yield of Milk.	Average Yield of Butter-fat	Number of Cows yielding from 0 to 99 lb. Butter-fat.	Number of Cows yielding from 100 to 149 lb. Butter-fat.	Number of Cows yielding from 150 to 199 lb. Butter-fat.	Number of Cows yielding from 200 to 249 lb. Butter-fat.	Number of Cows yielding from 250 to 299 lb. Butter-fat.	Number of Cows yielding from 300 to 349 lb. Butter-fat.	Number of Cows yielding from 350 to 399 lb. Butter-fat.	Number of Cows yielding from 400 Butter-fat.
					Lb.	Lb.								
Darling Downs	36	978	1,778	150	4,247	172	25	42	32	24	17	9	1	..
Moreton	45	1,712	4,356	505	3,523	147	69	234	133	52	14	2	1	..
Wide Bay	46	1,396	2,793	315	3,158	142	43	169	68	31	4	..	..	..
Burnett	55	2,054	4,817	425	3,675	146	50	197	138	32	6	2	..	..
Central	37	749	1,814	172	2,980	126	43	82	40	5	2	..	..	..
North Queensland	34	1,206	2,866	342	3,778	158	40	115	120	47	19	1	..	..
Total	253	8,095	18,424	1,909	..	..	270	839	531	191	62	14	2	..
General Average	..	..	..	..	3,550	148	14.143 per cent.	43.949 per cent.	27.815 per cent.	10.005 per cent.	3.247 per cent.	0.733 per cent.	0.104 per cent.	..

HERD RECORDING.

DARLING DOWNS.

District.	Number of Herds.	Number of Cows.	Number of Tests.	Cows completed Lactation.	Average Yield of Milk.	Average Yield of Butter-fat.	Number of Cows yielding from 0 to 99 lb. Butter-fat.	Number of Cows yielding from 100 to 149 lb. Butter-fat.	Number of Cows yielding from 150 to 199 lb. Butter-fat.	Number of Cows yielding from 200 to 249 lb. Butter-fat.	Number of Cows yielding from 250 to 299 lb. Butter-fat.	Number of Cows yielding from 300 to 349 lb. Butter-fat.	Number of Cows yielding from 350 to 399 lb. Butter-fat.	Number of Cows yielding from 400 lb. Butter-fat.
					Lb.	Lb.								
Toowoomba	5	80	144	..	..	..	..	..	..	..	..	..	..	..
Dalby	11	412	670	17	4,922	186	..	3	8	5	1	..	..	..
Clifton	2	65	158	35	6,223	244	..	2	5	12	9	6	1	..
Warwick	11	269	544	80	3,259	142	16	36	17	6	4	1	..	..
Oakey	2	48	136	9	6,426	234	..	1	2	1	3	2	..	..
Chinchilla	5	104	126	9	1,893	75	9	..	..	..	..	..	..	..
Total	36	978	1,778	150	..	..	25	42	32	24	17	9	1	..
Average	..	..	..	..	4247	172	..	..	..	..	..	..	..	..

MORETON.

District.	Number of Herds.	Number of Cows.	Number of Tests.	Cows completed Lactation.	Average Yield of Milk.	Average Yield of Butter-fat.	Number of Cows yielding from 0 to 99 lb. Butter-fat.	Number of Cows yielding from 100 to 149 lb. Butter-fat.	Number of Cows yielding from 150 to 199 lb. Butter-fat.	Number of Cows yielding from 200 to 249 lb. Butter-fat.	Number of Cows yielding from 250 to 299 lb. Butter-fat.	Number of Cows yielding from 300 to 349 lb. Butter-fat.	Number of Cows yielding from 350 to 399 lb. Butter-fat.	Number of Cows yielding from 400 lb. Butter-fat.
Kingston	15	668	1,894	257	3,639	154	31	108	72	36	7	2	1	..
Beaudesert	10	418	932	138	3,136	134	29	70	24	11	4	..	..	..
Esk	6	302	790	79	3,608	140	5	47	25	2	..	..	..	..
Grantham	7	197	467	20	3,768	145	3	8	8	1	..	..	..	..
Laidley	3	27	84	11	4,610	190	1	1	4	2	3	..	..	..
Sundries	4	100	189	..	..	..	..	..	..	..	..	..	..	..
Total	45	1,712	4,356	505	..	..	69	234	133	52	14	2	1	..
Average	..	..	..	..	3,523	147	..	..	..	..	..	..	..	..

District.	Number of Herds.	Number of Cows.	Number of Tests.	Cows completed Lactation.	Average Yield of Milk.	Average Yield of Butter-fat.	Number of Cows yielding from 0 to 99 lb. Butter-fat.	Number of Cows yielding from 100 to 149 lb. Butter-fat.	Number of Cows yielding from 150 to 199 lb. Butter-fat.	Number of Cows yielding from 200 to 249 lb. Butter-fat.	Number of Cows yielding from 250 to 299 lb. Butter-fat.	Number of Cows yielding from 300 to 349 lb. Butter-fat.	Number of Cows yielding from 350 to 399 lb. Butter-fat.	Number of Cows yielding from 400 lb. Butter-fat.
					Lb.	Lb.								
					WIDE BAY.									
Gympie	15	364	821	37	3,615	161	3	16	10	5	3	..	..	..
Caboolture	12	245	365	25	4,025	187	..	3	14	8	..	..	..	..
Eumundi	5	104	214	19	2,793	124	2	15	2	..	..	..	..	..
Pomona	3	113	141	..	..	..	..	..	..	..	..	..	..	..
Malery	4	250	417	113	3,277	154	9	52	33	18	1	..	..	..
Woodford	7	320	835	121	2,783	118	29	83	9	..	..	..	..	..
Total	46	1,396	2,793	315	..	..	43	169	68	31	4	..	..	..
Average	..	..	..	..	3,158	142	..	..	..	..	..	..	..	..
					BURNETT.									
Kingaroy Line	19	782	2,001	228	4,019	155	18	106	66	30	6	2	..	..
Gayndah	12	442	1,053	89	3,312	139	16	32	40	1	..	..	..	..
Mundubbera	10	279	538	..	..	..	..	..	..	..	..	..	..	..
Biloela	10	370	796	79	3,158	130	12	46	20	1	..	..	..	..
Monto	4	181	429	29	3,492	140	4	13	12	..	..	..	..	..
Total	55	2,054	4,817	425	..	..	50	197	138	32	6	2	..	..
Average	..	..	..	..	3,675	146	..	..	..	..	..	..	..	..
					CENTRAL.									
Rockhampton	11	220	668	113	3,194	133	24	51	31	5	2	..	..	..
Wowan	8	155	337	..	..	..	..	..	..	..	..	..	..	..
Bundaberg	6	156	439	14	2,936	139	1	9	4	..	..	..	..	..
Gladstone	7	161	272	45	2,455	107	18	22	5	..	..	..	..	..
Mackay	5	57	98	..	..	..	..	..	..	..	..	..	..	..
Total	37	749	1,814	172	..	..	43	82	40	5	2	..	..	..
Average	..	..	..	..	2,980	126	..	..	..	..	..	..	..	..
					NORTH QUEENSLAND.									
Atherton	20	693	2,043	339	3,788	158	40	114	118	47	19	1	..	..
Daintree	14	513	823	3	2,717	157	..	1	2	..	..	..	..	..
Total	34	1,206	2,866	342	..	..	40	115	120	47	19	1	..	..
Average	..	..	..	..	3,778	158	..	..	..	..	..	..	..	..

REPORT OF THE SENIOR INSTRUCTOR IN PIG RAISING.

The first half of the year under review was very dry in the chief pigraising districts. Good summer rains and further widespread falls in mid-autumn altered the whole seasonal outlook. At the close of the year prices for pigs of all grades were good and prospects for the industry were bright.

With the development of the export trade and expansion of other market outlets for pig products, the general position of the industry is sound.

Queensland occupies a very important position in relation to the export trade. Four years ago the proportion of baconers in Australian pig-meat shipments to the United Kingdom was negligible. Last year it was about 70 per cent. Generally the weight of Queensland frozen carcases is lighter than that of exports from other States, because of the more extensive domestic demand for light-weight porkers and baconers. As an illustration, the weight of Queensland bacon pigs exported during 1937-38 averaged 116 lb. compared with the Victorian average of 132 lb. The reason for this is that Queensland bacon factories usually demand a baconer from 90 to 120 lb., although there exists a limited demand for baconers up to 160 lb. dressed.

For future guidance it is emphasised that the overseas demand for baconers is a more stable one than for porkers. The increasing export of baconer carcases is significant of a more stable market than that for porkers.

It is regarded as important in instructional work to emphasise that the pig is a clean animal, if given a reasonable opportunity of keeping clean; in fact, in this respect no other animal is so readily amenable to good management.

Health of Stock.—Throughout the State there has been a remarkable freedom from epidemic and other serious pig diseases. The incidence of tuberculosis is now less evident than formerly.

The system of following up reports of condemnations as issued by slaughtering inspectors has been continued during the year with very satisfactory results. A survey of the suburban piggeries in the Greater Brisbane and Ipswich areas has been made. Close co-operation between departmental officers and health officials of the municipalities concerned in the inspection and supervision of these piggeries has been maintained.

Attention has been given to the necessity of reducing losses from bruising and other injuries to pigs in transit, and prohibiting the trucking of pigs and calves in the same deck of railway wagons and the trucking of heavy pigs like backfatters in separate compartments from baconers and porkers. There has been a marked reduction in complaints regarding the use of large firebrands in the branding of pigs and, concurrently, an increase in the use of the body tattoo brand.

The pig industry benefited considerably from the visit of Dr. John Hammond of Cambridge University, who is a specialist in genetical work and an authority on carcase judging of bacon pigs.

Parties of farmers from pig-raising districts have, under the guidance of departmental officers, visited the metropolitan abattoirs and bacon factories, at which demonstrations in appraisal of carcases have been made by officers of the pig section.

Similar instructional visits were arranged in co-operation with the Darling Downs Co-operative Bacon Association and Foggitt, Jones Pty. Ltd., at their respective factories at Toowoomba and Oxley.

Pig Improvement Scheme.—Six stud pigs—three Berkshires and three Middle Whites—have been imported from England as foundation stock for a stud of pedigreed pigs at the Queensland Agricultural High School and College. This importation was made under the Pig Improvement Scheme, which provides for the distribution of well-bred animals of the required type to farmers on liberal terms, with a view to improving the breeds represented and fostering the production of better quality animals.

Studs of Berkshire pigs are maintained at the Goodna Mental Hospital and at Willowburn Mental Hospital, Farm Home for Boys, Westbrook, and the Palen Creek Prison Farm.

The extension of the auction sale system of selling pork and bacon pigs is being watched with considerable interest, for it has a bearing on the development of the industry. Where properly organised, results have been satisfactory.

The annual school of instruction for pig farmers arranged by the Department in conjunction with the Department of Public Instruction was very successful from every point of view.

Pig Clubs functioning under the Home Project Scheme continue to flourish, but there is a vast field for the expansion of this form of extension service.

Articles and working notes were contributed regularly to the *Queensland Agricultural Journal*, the *Weekly News Bulletin*, and newspapers with large country circulations, by officers of the Pig Section.

E. J. SHELTON,
Senior Instructor in Pig Raising.

STAFF REPORT.

Mr. L. A. Downey, Instructor in Pig Raising, reports:—

More favourable climatic conditions during the latter half of the year under review have caused an unprecedented demand for breeding pigs and store pigs to replace stock which was disposed of during the 1936-37 drought. Food supplies are still good and the industry has practically recovered from its severe setback, and is preparing for a very big increase in production in the immediate future.

There was a noticeable increase in the production of sweet potatoes last summer and this has had a very beneficial effect on pig production.

The improvement in conditions in the pig-producing areas has made producers much more receptive of education in economic production.

The most important features of the year's work are the adoption by the pig industry of Australia of the pig carcase standards as prepared in the United Kingdom for pigs imported from Australia; these were reviewed in the *Queensland Agricultural Journal*. The announcement of the Australian Meat Board that the industry should consider the baconer rather than the porker for the future export trade with the United Kingdom called for serious consideration. Queensland producers have had these two matters brought to their notice and breeders have become familiar with the carcase standards.

The export baconer class at the 1937 Brisbane Royal Show was judged on the new appraisal method and results were published in the *Queensland Agricultural Journal* and later in the pamphlet form.

The export baconer and porker carcase competitions conducted by the Australian Meat Board have been given full support, and although the first of the series received only six entries from Queensland, because of unfavourable weather conditions, 22 entries were shipped from Queensland in the second competition.

The publicity given to the results of carcase competitions, together with the demonstrations given by Dr. Hammond of Cambridge University, in the course of his visit to Queensland this year, have helped considerably in acquainting producers with market requirements.

Instruction in the field has been continued with success. Evening lectures illustrated with lantern slides, and demonstrations to individuals and to organised gatherings of farmers at field days, also have proved useful means of imparting instruction to producers.

Having greater space for the provision of the pig raising display at the Department of Agriculture and Stock Court of the Brisbane Exhibition in August, 1937, the opportunity was taken to display a model piggery planned on the paddock system. The model, completely equipped and stocked, was a centre of attraction and had an educational value in that most pigraisers could copy the design in any reconstruction of their piggeries.

Only three litters were weighed and recorded under supervision during the year, their records being:—

Tamworth—8 reared; total weight, 413 lb. at 8 weeks old.

Tamworth—7 reared; total weight, 258 lb. at 8 weeks old.

Large White—9 reared; total weight, 279 lb. at 8 weeks old.

The correspondence course of instruction in pigraising has been taken advantage of by an increasing number of junior and senior farmers, and there is accumulating evidence of the value of this course to the farming community. Thirty-five more students completed the course during the year, making a total of 239 who have completed the whole course. The present enrolment is 101.

The service of culling and selecting breeding stock for stud pig breeders and others has been continued as part of regular field work.

REPORT OF THE POULTRY EXPERT.

During the past year, production declined slightly further. The decline can be gauged to some extent by the number of eggs marketed through the Queensland Egg Board. During the year 1936-37, that organisation handled 4,940,763 dozen, and during 1937-38, 4,529,846 dozen. The reduction in yield followed loss of interest by flock owners who do not depend solely on poultry farming for a living. No provision for replacement had been made by them during the previous year, and their birds were sold when eggs became cheap. There is no known instance, however, of any well-established commercial poultry farmer ceasing his interest in the business, but, on the contrary, many indicated their intention of still further increasing their flocks. Production from this increase will be available in the course of the coming year.

Export.—Naturally, with a lower production, the quantity of eggs exported was not as great as in the previous year, the total being 1,234,380 dozen. Queensland Egg Board eggs are still regarded favourably in the markets of Great Britain, and no serious fault was found from a commercial point of view with the Queensland pack. The net returns from the eggs sold overseas during the period under review will enable the Board to make a further payment to suppliers.

Egg Values.—The decline in production, coupled with improved conditions in Great Britain, has resulted in a slight increase in values. It is difficult to indicate the increase in values to producers throughout the State. The following table shows fairly accurately the position of commercial poultry raisers in the Greater Brisbane area. The figures are the net payments by the Queensland Egg Board, as taken from producers' account sales. (The figures are in pence per dozen.)

1936.

July	Aug.	Sept.	Oct.	Nov.	Dec.
12.8	10.9	9.6	9.4	10.6	11.2

1937.

Jan.	Feb.	March	April	May	June
11.1	14.9	16.1	18.5	20.4	18.0

1937.

July	Aug.	Sept.	Oct.	Nov.	Dec.
16.4	11.5	10.4	10.6	10.6	12.9

1938.

Jan.	Feb.	March	April	May	June
14.7	14.7	15.0	17.9	20.8	20.9

Egg Quality.—The quality of the eggs sold on the local market has been the subject of some criticism. Complaints are probably based on lack of care by sellers; and their not realising that eggs are a perishable product which should be stored under conditions conducive to the preservation of quality. Many of the complaints also can be traced to conditions at the production end, because of the method adopted to prepare the eggs for market. This applies particularly to washing.

Washing of eggs is a practice that has been generally condemned. It is impossible, however, for the farmer to produce eggs which are quite clean, and in order to make them attractive they have to be put through a cleansing process. For this, water has to be used. To ascertain the best way to wash eggs, a series of experiments was planned and conducted in co-operation with Mr. H. E. Young, Assistant Research Officer. Consideration was given to the adding of an agent to the washing water which would destroy any harmful organism present and prevent subsequent infection. In most cases of egg spoilage which had come under the notice of the Department and which were traceable to the production end, moulds were the cause. In an effort to prevent spoilage from mould, eggs were washed with a solution containing 0·5 per cent. of Shirlan AG. This agent proved an efficient mould preventive, but was of no value in protecting the eggs against bacterial infection. It was found that Shirlan AG did not flavour the egg, had no detrimental effect on its appearance, and did not increase the difficulty in handling eggs.

A continuance of investigations for the purpose of finding a suitable protective agent which may be added to water for washing eggs is recommended.

Fodder Prices.—As pointed out in my last annual report, prices of fodder had shown a material increase over the year of peak production—1935. In the year under review, there was no relief until the first half of 1938, as is indicated in the following table which gives the average retail prices for the past few years:—

AVERAGE RETAIL COST OF FODDER—BRISBANE.

Period.	Maize. Per bushel.		Wheat. Per bushel.		Pollard. Per 100 lb.		Bran. Per 100 lb.	
	s.	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*
1st half 1935 ..	3	9½	3	8½	6	3	6	2
2nd half 1935 ..	4	10½	4	6½	6	11	6	11
1st half 1936 ..	5	2½	4	11	7	7	7	4
2nd half 1936 ..	5	10	5	1½	8	1	8	0
1st half 1937 ..	6	5	6	7	8	4	7	10
2nd half 1937 ..	6	0	6	5	8	11	8	6
1st half 1938 ..	5	1	5	6	8	6	8	2

Values such as these have undoubtedly been the reason for the curtailing of poultry raisers' activities, but a tendency for the industry to adjust itself to the conditions that are ruling to-day has been observed.

Experiments.—The experiments conducted at the Animal Health Station to ascertain principally the value of grain sorghum as a poultry fodder, terminated in the course of the year. In this series of experiments, two groups of birds were fed on each of the following rations:—

Ration No. 1.—54 per cent. maize meal, 18 per cent. bran, 9 per cent. pollard, 9 per cent. lucerne meal, 7 per cent. meat and bone meal, 3 per cent. linseed meal. To each 100 lb. of mash 1 lb. of salt is added.

Ration No. 2.—85 per cent. soaked wheat, 7½ per cent. meat and bone meal, 7½ per cent. lucerne meal, and 1 per cent. salt.

Ration No. 3.—60 per cent. ground sorghum, 17 per cent. maize meal, 10 per cent. lucerne meal, 8 per cent. meat and bone meal, 4 per cent. dried buttermilk powder, and 1 per cent. salt.

There was no significant difference between the results obtained in either group. In the group of birds fed on soaked wheat, feather plucking was most pronounced. This eventually led to "cannibalism," with the result that the experiments had to be terminated earlier than should have been the case. Feather plucking and "cannibalism" appear to be associated very definitely with this system of poultry feeding. The practice of feeding soaked grains in Queensland has not proved popular for the same reason. For the limited period over which the test was conducted, the average production per bird was—

	Eggs.
Ration No. 1 (Control)	143
Ration No. 2 (Soaked Wheat)	133
Ration No. 3 (Grain Sorghum)	135

Although these figures do not condemn the soaked wheat system of feeding, the wastage in these experiments because of "cannibalism" does.

Poultry Improvement Plans.—In the course of the year, legislation was enacted to permit of the voluntary registration of hatcheries. Regulations were drawn up which called for the blood testing of all stock kept by applicants for registration, and the approval by officers of the Department of all birds kept for breeding. Breeders numbering thirty-four applied for registration of their hatcheries, which for the first year is considered satisfactory.

In conducting blood testing and selection of stock, officers of the Department have had full co-operation from hatchery owners and they have shown a keenness to comply with the conditions laid down and which have as their objective the improvement of the quality and health of the chickens distributed. Although the Department was prepared to permit of the retention of reactors where proper facilities existed for isolation, not one hatchery owner desired to keep such birds on his premises; but, to the contrary, they were sold for the table as soon as possible.

Of the thirty-four hatcheries for which registration was applied, only one had to be refused because of the heavy degree of infection present in the flock.

The following table summarises the position as at 30th June, 1938:—

Number of hatcheries which applied for registration ..	34
Number of hatcheries registered	33
Number of hatcheries rejected	1
Total number of birds tested ..	45,796
Total number of reactors ..	2,271
Average percentage of reactors found in all birds tested ..	4.95%

Blood testing the birds in the flocks of registered hatcheries entailed a considerable amount of labour, and officers in the Branch, in an effort to cope with the work and fit it in with routine farm instruction, have not confined themselves to regular hours, but have given freely of their own time. The co-operation of officers of the Animal Health Station in the supply of antigen necessary for this work also is appreciated.

Chick Sexing.—Ten candidates sat for examination to deter their efficiency in the practice of chick sexing during the year. Four of these candidates showed sufficient proficiency to practise. Regulations under *"The Diseases in Poultry Acts,* 1923 *to* 1937" prescribing the stain to be used for the branding of cockerel day-old chickens have been drafted. Under the same Act seven persons have been licensed to determine the sex of chickens, three of whom were practising in the previous years. We have no authentic record of the number of chickens sexed during the year in Queensland, but one licensee has advised that, during the past year, he determined the sex of 153,000 chickens.

At this stage of the year there is every indication that the recent legislation, particularly with reference to the sale of cockerel day-old chickens, is producing beneficial results.

Live Poultry Markets.—During the period under review, prices for live poultry throughout Queensland have been much higher than for some time. This is, no doubt, due more or less to the reduction in numbers of poultry resulting from rigorous culling made necessary because of the high cost of fodder in the previous year. Regular and frequent visitations have been made to the markets by poultry inspectors. As a result of these inspections, it was only necessary to condemn 193 birds, an indication that the general health of the stock offered for sale was reasonably satisfactory. An anaemic condition was the cause of practically 45 per cent. of the condemnations; while roupy, cystic conditions and tumors were the chief causes.

Replacements of Flocks.—Fewer chickens were hatched than during the previous season, but breeders have given more attention to the class of birds used for breeding purposes, with the consequence that there is a considerable improvement in the quality of the stock on farms throughout the State.

Indications for the coming season are favourable to normal replacement, and it is anticipated that there will be a considerable increase in the poultry flock numbers.

Laying Tests.—Six egg-laying competitions were conducted under Departmental supervision in the course of the year. Wynnum, Brisbane, Childers, Bundaberg, Townsville, and Maryborough were the competition centres. Each test was attended by officers of the Department for inspection of stock and for recording and supervising the weighing of eggs. The tests are being continued and this year will include another in the Rockhampton district.

Instruction.—Officers of the Department have visited all the important poultry raising districts of Queensland in the course of the year for the purpose of instructing poultry farmers by lectures and field demonstrations, and through personal contact. A considerable amount of instructional work also was conducted by correspondence.

A refresher course was provided for poultry judges, particularly for those who had failed to qualify in the previous year. This course was conducted in conjunction with the National Utility Poultry Breeders' Association.

P. RUMBALL, Poultry Expert.

REPORT OF THE CHIEF INSPECTOR OF STOCK.

During the year the rainfall in the pastoral districts has been irregular and patchy. Whilst some districts have had good rains with ample grass, others have experienced drought conditions, and have had to resort to hand feeding or to find agistment country for their stock.

The preliminary figures of livestock in the State at 1st January last, as made available by the Government Statistician, are:—

——	Estimate at 1st January, 1938.	Actual Numbers at 1st January, 1937.
Sheep	22,200,000	20,011,749
Cattle	6,000,000	5,950,572
Horses	441,000	441,536
Pigs	290,000	290,855

It is very satisfactory to note an estimated increase of over 2,000,000 sheep, as compared with the previous year. This year the figure is the highest recorded since 1932, when the total was 22,324,278. The number of cattle has increased approximately by 50,000, but the number of horses and pigs shows little change from the previous year's figure.

Improvement in the quality and breeding of stock, although slow, is being given considerable attention by many stockowners, a number of cattle and sheep having been imported from overseas and from the Southern States.

The imported bulls and heifers that have been introduced during the year from America have been of the polled variety, viz.—Polled Herefords and Shorthorns. Some new studs of the Aberdeen-Angus have also been founded in the State.

From reports received from overseas, there is urgent need for the improvement in the quality of our chilled beef exported. This can be greatly assisted by improving our herds; further, it is essential that regular supplies are maintained throughout the year.

The frozen beef export remains about the same. Chilled beef exports continue to show a steady improvement. Statistics issued by the Australian Meat Board show that for the last two years the percentage of beef exported from this State, as compared with the total export from the Commonwealth, is over 90 per cent.

The Commonwealth scheme for the assistance of importers of pedigree breeding livestock from the United Kingdom to Australia, which was introduced in 1935, and under which the importer had to pay two-fifths of all the incidental expenses connected with the transport of the stock from the port of export in the United Kingdom to the port of import in Australia, has been revised to provide specified rates of subsidy.

The scheme is applicable only to pedigree breeding cattle, sheep, milch goats, and swine (Berkshire, Large White, Middle White, and Tamworth breeds).

The rates of subsidy are as follows:—Cattle, £50 per head; sheep, £20 per head; pigs, £25 per head; milch goats, £20 per head.

The flat rates for out-of-pocket expenses, fixed by the shipping companies, which have agreed to carry the stock free of freight charges, have been increased, and are as follow:—Cattle, £34 13s. per head, including boxes; sheep, £11 11s. per head, including boxes or pens; milch goats, £11 11s. per head, including boxes or pens; pigs, £6 16s. 6d. per head, excluding pens. The old rates were:—Cattle, 30 guineas, including boxes; sheep, 10 guineas, including boxes or pens; milch goats, 10 guineas, including boxes or pens; and pigs, 6 guineas, excluding pens.

The hereditary unsoundnesses of horses have considerably decreased since the Government passed the necessary legislation for the examination of all stallions and the registration of those found sound and of suitable type and conformation. Unsound stallions are prohibited from use. There is a shortage of army remounts, notwithstanding the fact that prices have been high and profitable to breeders, and buyers from other countries have operated freely. This should help to stimulate the breeding of this class of horse. The Clydesdale is always in good demand for agricultural and other purposes and realises good prices, but the supply is not always equal to the demand. In the Toowoomba district good draught horses have realised up to £45 per head.

The buffalo fly survey carried out this year showed that a number of holdings were fly-infested, but none of these were east of the Leichhardt River, and the survey disclosed the fact that the natural spread of the fly did not exceed approximately 100 miles from the coast. Owing to one mob of fly-infested cattle arriving at Kajabbi, the local cattle were infested for some weeks. This necessitated the spraying of cattle trucking at Kajabbi until weather conditions caused the fly to disappear.

Ephemeral fever or "three-day sickness" of cattle, which was very prevalent last year, has not appeared in an epizootic form this year, but odd cases of sickness have been reported by owners, who were of the opinion that it was "three-day sickness."

The Veterinary Medicines Board continues to examine the formulæ and claims of the preparations being offered for sale, and still finds it necessary to cause labels to be altered in order to check the extravagant claims made by some vendors, whose idea as to the ability of their preparations to cure ailments are often, to say the least, exaggerated.

The action necessary during the year under review has again proved the value of this legislative enactment.

During the year ten board meetings were attended.

TICK CLEANSING AREA.

District Inspector McNeill reports in connection with the Helidon area that during the year there have been no extensions to the area, but two portions have been declared "clean" and holdings therein removed from all dipping restrictions. Particulars of the portions declared "clean" are as follows:—

1. *East Haldon-Woodbine Section.*—Eleven holdings, approximate area, 11,000 acres, approximate number of stock, 950.
2. *Ravensbourne Section.*—Forty-six holdings, approximate area, 7,000 acres, approximate number of stock, 1,255.

Thus, during the year 57 holdings, comprising approximately 18,000 acres and containing about 2,205 head of stock, have been declared "clean."

The approximate area now under cleansing operations is 532 square miles, with 1,177 holdings and about 20,795 head of stock. In this area there are approximately 200 tick-infested holdings.

The declared "clean" area is now approximately 1,457 square miles in extent, embracing 985 holdings and about 32,205 head of stock.

During the year the reinfestations of holdings have not altered, there being still 63 holdings in the clean area in a doubtful state. The infection is very slight, and is not regular, frequently disappearing for some months and then a few ticks show up. It is anticipated that these holdings will be definitely cleansed this coming year.

Dips.—There are thirty-one dips still operating more or less in the district, those in use for public dipping being analysed regularly.

HELIDON CLEANSING AREA.

No. of Holdings Inspected.	No. of Holdings Infested.	No. Stock Dipped or Sprayed.	Total Stock Inspected.	Section.
227	27	1,852	3,405	Helidon
525	33	2,118	11,061	North Helidon
616	135	7,868	17.838	Ma Ma Creek
431	198	17,468	24,017	East Haldon—Woodbine
435	25	4,032	11,044	Ravensbourne—Hampton
208	6	3,620	8,853	Crow's Nest 1 and 3
3	..	7	69	Crow's Nest 1 and 3
503	64	6,968	18,998	Crow's Nest 2
2,948	488	43,933	95,285	
Totals for 1936-37—				
2,761	490	40,177	90,763	

SOUTH BURNETT CLEANSING AREA.

District Inspector McKinstrey reports—

Yarraman.—Cleansing in this section has been practically finished for the past two years, infestations having been confined to holdings on boundaries.

Nanango.—Cleansing in this section has been progressive and very satisfactory. There were two isolated infestations in otherwise clean country, which it is expected have now cleaned up, and, apart from a small group of four holdings in what was originally the Wyalla section, infestations are confined to boundary holdings. With one exception, these infestations were of a slight nature.

Kingaroy.—Cleansing results in this section have been satisfactory. Apart from one light infestation recently disclosed in otherwise clean country, the infestations are confined to holdings on the south-eastern corner toward the Wondai section, and in close proximity to the open stock route between Wondai and Nanango. The infestations were of only a slight nature.

Wondai.—Under existing circumstances of an exposed cleansing boundary toward heavily infested country, cleansing in this section has been satisfactory, the infestations recorded, with one exception, being confined to a buffer area, which in due course will be isolated by gates and grids from a permanent working cleansing area.

Boondooma.—Cleansing in this section has not been as satisfactory as could have been expected. In a final check taken from office records and particulars recently supplied by the inspector, it would appear that there are four holdings infested as previously reported in the compartment nearest to the Darling Downs and ten infested holdings in the next compartment. There are also ten holdings infested in the parish of Boondooma, five infested holdings in the parish of Jua, and one infested holding in the parish of Lawson.

There seems to be no reason why practically the whole of this district should not clean up next season. Generally speaking, in regard to the cleansing portion of this district as a whole, I should say that progress has been definite, and in respect to the bulk of the area under cleansing conditions, I should say that it is now more a matter of consolidating and holding advantages already gained.

Divisions.	Holdings Inspected.	Holdings Infested.	Stock Inspected.	Stock Dipped.
Various	103	..	2,278	226
Kingaroy ..	119	6	6,289	872
	86	6	1,245	..
Nanango	291	15	10,328	5,781
Yarraman ..	433	11	17,000	10,241
Wondai	173	32	7,179	3,208
Proston	124	14	9,889	6,002
Boondooma ..	270	30	21,941	5,018
Totals ..	1,599	108	76,149	31,348

With regard to the foregoing figures, total infestations would refer to those actually recorded by individual officers.

Holdings infested would refer to those holdings where infestations had occurred at any time during the twelve months in question, but a percentage of holdings thus totalled would have cleaned up in the interval, though they cannot be recorded as clean until a further check over next season, and the bulk of the balance of holdings infested could be classed as reasonably clean, on account of the infestations being now of only a slight nature.

PROSECUTIONS.

Acts.	Number of Prosecutions.	Number of Convictions.
Diseases in Stock Acts	36	35
Slaughtering Act	16	14
Brands Acts	1	1

TUBERCULIN TEST.

Animals submitted to the tuberculin test totalled 4,382, as compared with 3,541 in the previous year. There were 276 reactors.

Details.

Purpose of Test.	No. Animals Tested.	No. Positive Reactors.
Tubercule Free Herd Scheme ..	1,532	55
Selected Animals—Elimination of T.B. in Swine	453	89
Various	2,397	132

DIPPING FLUIDS.

The number of dipping fluids analysed during the year was 420.

HORSES EXPORTED OVERSEAS.

Horses exported overseas numbered 2,293.

VISCERA EXAMINED DURING THE YEAR.

One hundred and seventy-six samples of viscera and ingesta were analysed. Of this number sixty-nine contained arsenic and one saponin.

QUARANTINE ACT.

Livestock imported from overseas:—33 cattle, 14 pigs, 8 fowls, 2,358 aviary birds, 1,933 goldfish and other small fish.

Articles imported after complying with the Quarantine Regulations:—89,873 lb. casings, 2,016 lb. blood albumen, 6 hams, 44 cases meat samples, 6 crates frozen game, 13 dried ducks, 56 used saddles, 40 articles of harness, 204 horse effects, 50 hides, 1,000 goatskins, 2 furskins, 3 skins (trophies), 11 sporting trophies, 3 bird cages, 3 pig crates, 4 kennels.

PLEURO-PNEUMONIA CONTAGIOSA.

The total number of outbreaks was twenty-five, as compared with eighteen the previous year.

District.	1937.						1938.						Total.
	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	
Barcaldine	..	..	..	..	..	..	..	..	..	..	..	..	..
Bowen	..	..	..	..	..	1	..	..	..	..	..	..	1
Brisbane	..	..	..	..	1	..	..	..	..	..	..	..	1
Cairns	..	1	1	..	..	..	..	..	..	..	..	..	2
Charleville	..	1	..	2	..	..	..	..	..	..	..	..	3
Clermont	1	1	1	..	..	..	..	..	..	..	..	..	3
Cloncurry	..	..	..	..	..	..	..	..	..	..	..	..	..
Emerald	..	..	..	..	..	..	..	..	..	..	..	..	..
Gladstone	..	..	..	..	..	..	..	..	..	..	..	..	..
Hughenden	..	..	..	..	..	..	..	..	..	..	..	..	..
Longreach	..	..	..	..	..	..	..	..	..	..	..	..	..
Maryborough	..	..	..	..	..	..	..	..	..	..	..	..	..
Normanton	..	..	..	..	..	..	..	..	..	..	..	..	..
Rockhampton	..	..	..	..	..	..	..	..	..	..	..	..	..
Roma	..	..	..	..	..	1	..	..	..	..	..	..	1
South Burnett	..	..	..	..	..	..	..	..	..	..	..	..	..
Toowoomba	..	..	..	..	1	..	..	..	..	..	2	..	3
Townsville	..	1	1	..	..	..	..	3	2	2	2	..	11
Warwick	..	..	..	..	..	..	..	..	..	..	..	..	..
Winton	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	1	4	3	2	2	2	..	3	2	2	4	..	25

TABLE SHOWING STOCK MOVEMENTS IN THE SEVERAL STOCK DISTRICTS FOR THE YEAR ENDED 30TH JUNE, 1938.

District.	ENTERED DISTRICT.			REMOVED FROM DISTRICT.			MOVEMENTS IN DISTRICT.			STOCK DIPPED.		
	Horses.	Cattle.	Sheep.	Horses.	Cattle.	Sheep.	Horses.	Cattle.	Sheep.	Horses.	Cattle.	Sheep.
Barcaldine ..	7,189	40,430	657,579	8,433	45,988	671,823	6,263	20,422	1,102,381	..	..	..
Bowen	681	23,019	6,483	1,279	8,799	190	1,758	29,840	40	31	..	..
Brisbane	5,862	277,212	311,998	4,539	41,546	16,414	7,331	526,120	385,887	2,338	1,698	1,961
Cairns	1,080	2,926	17,497	2,602	35,560	..	13,971	112,766	982	6	1,516	..
Charleville ..	4,466	35,169	392,316	13,280	101,186	969,517	13,252	55,395	1,078,173	..	..	..
Clermont	283	7,927	4,051	2,091	46,465	52,731	4,455	30,089	93,958	13	3,969	..
Cloncurry	4,291	79,015	96,995	7,344	122,424	87,716	13,882	133,792	292,406	588	104,615	..
Emerald	1,710	10,079	120,214	4,060	70,424	96,775	6,929	64,014	248,810	364	17,689	..
Gladstone	1,245	45,071	2,358	1,858	20,949	..	1,437	41,139	71	895	2,162	..
Helidon	1,520	19,313	5,983	2,039	42,755	2,531	1,559	52,267	962	796	46,207	..
Hughenden ..	2,125	12,059	143,763	4,079	29,492	187,125	5,751	25,940	485,603	1,039	6,925	1,434
Longreach	4,103	54,381	127,533	6,476	40,614	797,474	9,488	20,980	1,071,075	..	..	..
Maryborough ..	2,962	38,489	30,254	6,851	176,178	628	6,854	236,718	367	90	11,520	..
Normanton ..	1,296	685	..	2,794	57,431	1,350	4,135	27,554	..	..	..	..
Rockhampton ..	1,191	61,417	119,777	2,631	52,206	40,501	12,870	251,066	35,162	104	7,727	..
Roma	3,419	40,391	223,439	10,058	163,516	678,507	14,578	227,643	1,221,185	597	18,976	..
South Burnett ..	2,137	51,045	7,703	4,877	162,787	1,656	8,665	175,022	1,405	1,103	54,393	..
Toowoomba ..	4,835	73,234	382,389	14,658	201,620	592,830	30,446	800,332	2,037,698	1,063	4,436	..
Townsville ..	5,801	97,302	27,585	6,240	27,648	5,066	8,095	40,085	1,014	4	131	..
Warwick	3,753	32,504	294,314	6,121	77,019	762,425	9,047	216,359	1,475,015	210	11,365	3,335
Winton	5,104	52,081	171,399	4,828	91,274	130,209	4,109	69,904	237,874	..	..	..

STOCK SOLD AT THE CANNON HILL SALEYARDS.

Description of Stock.	1935-36.	1936-37.	1937-38.
Bullocks	91,081	83,661	94,391
Cows	44,560	55,588	73,875
Calves	46,518	70,428	73,955
Sheep	406,790	454,649	477,551
Lambs	48,135	49,447	62,294
Swine	42,292	59,521	62,014

From the above statistics it will be seen that there was a general increase in the various classes of stock sold.

Prices.

Prices.	1935-1936.			1936-1937.			1937-1938.		
Cattle.	£	*s.*	*d.*	£	*s.*	*d.*	£	*s.*	*d.*
Average value per cental—									
Chilled bullocks	1	7	3	1	6	11	1	11	10
Trade ..	1	3	9	1	4	11	1	8	1
Cows and heifers	1	1	6	1	3	1	1	5	1
Other classes of stock.									
Average value per lb.—									
Wethers ..	0	0	3·88	0	0	3·52	0	0	3·53
Ewes ..	0	0	3·47	0	0	3·27	0	0	3·20
Lambs ..	0	0	6·21	0	0	6·61	0	0	6·89
Calves ..	0	0	2·86	0	0	3·25	0	0	3·37
Swine ..	0	0	5·23	0	0	5·86	0	0	6·66

"THE SLAUGHTERING ACT OF 1898."

The observance of the Act and Regulations by butchers, according to reports of departmental officers, is very satisfactory.

Butcher shops in country centres continue to receive periodical inspections, and due attention is being paid to cleanliness and hygiene. Replacement of old premises by modern buildings are still being made, and in addition to these there have been twenty-six new shops erected.

The use of greaseproof paper for wrapping is becoming more general and is appreciated by the public.

There is a satisfactory observance of the Regulations respecting vehicles used for the carriage of meat, many replacements being made also in this direction. Other wagons have been painted and renovated.

Slaughter-yards have been kept up to regulation standard, tarring and whitewashing being carried out at the necessary intervals. Some reconstructions have been made and new floors laid down, whilst there have been a total of twenty-seven new slaughter-houses built.

Trouble is experienced at times in the matter of the disposal of ingesta and the burying of blood. Cautions usually have had the desired effect.

The majority of butchers are endeavouring to adhere faithfully to the Regulations regarding slaughter-house piggeries. Reconstructions are also being made in this direction, and some very up to date pens have been erected. A lack of attention to cleanliness is occasionally met with.

Prolonged periods of wet weather have again militated against desirable conditions of piggeries in some localities. In some cases there have been removals to higher ground, but in some of the low-lying areas this has been impossible.

BRISBANE ABATTOIR AREA.

Nine new butcher shops and three new cash cutting carts have been registered in the metropolitan area during the period under review. There have also been a number of additional delivery vehicles registerd by various butchers.

Systematic inspection of butcher shops and vehicles has ensured the maintaining of a good standard of cleanliness.

No prosecutions were made during the year, but various orders and letters of warning have been issued and have in most cases proved effective. All complaints received have been satisfactorily investigated.

Frequent night patrols have been made in different districts for the purpose of investigating reports being received in connection with illegal slaughter, and although no individuals have been apprehended, these patrols have a salutary effect in so far as they serve to keep the practice in check.

The total number of shop inspections made during the year was 2,851.

METROPOLITAN SHOPS.

The number of shops and vehicles registered by the Queensland Meat Industry Board to the 30th June, 1938, as compared with the two previous years, is as follows:—

—	1935-36.	1936-37.	1937-38.
Butcher shops	278	284	293
Delivery vehicles	412	401	437
Cash cutting carts	88	77	64

BACON FACTORIES.

Bacon factory killings have again decreased, but not to the same extent as the previous year. There has been a considerable increase in the number of pigs exported during the last twelve months.

Number Slaughtered.	1935-36.	1936-37.	1937-38.
Pigs	383,207	315,837	293,723

Of the 1937-38 total, 45,114 pigs were slaughtered for export purposes.

Condemnations were as follows:—

Tuberculosis.	1935-36.	1936-37.	1937-38.
Carcases	3,791	3,081	2,268
Heads	29,580	22,939	22,387

In addition, 12,963 cattle and 8,476 calves were slaughtered at the bacon factories.

STOCK SLAUGHTERED AND CONDEMNED AT THE BRISBANE ABATTOIR.

The following statement shows stock slaughtered and condemned at the Brisbane Abattoir for the home markets, stock killed for export not being included. There has been an increase in all classes of stock killed, with the exception of pigs, which have decreased. It will be noted that the increase in the killing of sheep and lambs has been a substantial one.

Description of Stock.	1935-36.	1936-37.	1937-38.
Bullocks	46,034	41,350	32,794
Cows	39,348	45,240	61,880
Calves	68,435	72,286	74,735
Sheep and lambs ..	328,892	344,279	384,618
Swine	32,312	38,176	31,829

Condemnations for the period under review were as follow:—

Cause.	Bullocks.	Cows.	Calves.	Sheep & Lambs.	Swine.
Tuberculosis	590	1,405	17	..	878
Gangrene	60	102	18	22	5
Fever	24	48	3	107	8
Bruising	60	106	30	71	67
Emaciation	306	955	9,494	580	19
Abscesses	23	36	53	171	19
Septicaemia	2	7	..	..	4
Redwater	32	78	..	..	..
Septic wounds	5	10	..	..	..
Jundice	..	3	1	1	..
Pyaemia	..	..	..	..	2
Peritonitis	..	2	..	..	1
Actinomycosis	..	..	1	..	..
Pleurisy	..	2	..	..	..
Uraemia	1	..	..	..	2
Pneumonia	..	1	..	..	..
Weed poisoning	5	16	..	..	..
Metritis	..	1	..	..	..

POLICE ACTING INSPECTORS.

The return of stock slaughtered under the supervision of police acting inspectors is as follows:—

Bullocks	28,278
Cows	49,475
Calves	5,156
Sheep	64,939
Swine	15,696

The following table shows stock slaughtered and condemned in the course of the year, and is compiled from returns furnished by permanent officers of the Department performing slaughtering duties throughout the State, with headquarters at the following centres:—Atherton, Ayr, Beaudesert, Biggenden, Biloela, Boonah, Boondooma, Bowen, Bundaberg, Cairns, Charleville, Charters Towers, Chinchilla, Clermont, Clifton, Cloncurry, Coolangatta, Crow's Nest, Dalby, Emerald, Gayndah, Gladstone, Goombungee, Goondiwindi, Grantham, Gympie, Helidon, Hughenden, Ingham, Innisfail, Ipswich, Jandowae, Julia Creek, Killarney, Kingaroy, Laidley, Longreach, Mackay, Malanda, Mareeba, Maryborough, Miles, Millmerran, Monto, Mount Isa, Mundubbera, Murgon, Nambour, Nanango, Normanton, Oakey, Pittsworth, Proston, Ravensbourne, Roma, Rockhampton, Rosewood, Toogoolawah, Toowoomba, Townsville, Warwick, Wandoan, Wondai, Wowan, and Yarraman.

The return of swine slaughtered is exclusive of those treated at bacon factories, a list of which is shown separately:—

Description of Stock.	Number Slaughtered.	Carcases and Portions Condemned.	Disease.	Percentage.
Bullocks	50,566	99 Carcases	Tuberculosis	·19
		16 Forequarters	Tuberculosis	·03
		6 Hindquarters	Tuberculosis	·01
		12 Heads	Tuberculosis	·02
		1 Carcase	Bruised	·001
		9 Forequarters	Bruised	·01
		7 Carcases	Emaciation	·01
		28 Heads	Actinomycosis	·05
		9 Carcases	Fevered	·01
		6 Carcases	Cancer	·01
		2 Carcases	Gangrene	·003
		1 Carcase	Jaundice	·001
		1 Carcase	Uraemia	·001
		1 Carcase	Abscesses	·001
		1 Carcase	Peritionitis	·001
Cows	114,668	223 Carcases	Tuberculosis	·19
		41 Forequarters	Tuberculosis	·03
		11 Hindquarters	Tuberculosis	·009
		30 Heads	Tuberculosis	·02
		6 Carcases	Bruised	·005
		15 Forequarters	Bruised	·01
		16 Carcases	Emaciation	·01
		5 Carcases	Redwater	·004
		18 Heads	Actinomycosis	·01
		2 Carcases	Actinomycosis	·001
		2 Carcases	Jaundice	·001
		1 Carcase	Pleurisy	·0008
		1 Carcase	Lantana poisoning	·0008
Calves	15,730	371 Carcases	Under weight	2·36
Sheep	229,207	16 Carcases	Emaciation	·006
		6 Carcases	Bruised	·002
		1 Carcase	Septicaemia	·0004
		1 Carcase	Caseous Lymph Adenitis	·0004
Swine	43,450	162 Carcases	Tuberculosis	·37
		970 Heads	Tuberculosis	2·23
		3 Carcases	Abscesses	·006
		13 Heads	Abscesses	·03
		1 Carcase	Bruised	·002
		2 Carcases	Pneumonia	·004
		3 Carcases	Emaciation	·006
		2 Carcases	Fever	·004
		2 Carcases	Septicaemia	·004
		1 Carcase	Cancer	·002
		1 Carcase	Swine Plague	·002
		1 Carcase	Peritonitis	·002
		1 Carcase	Pyaemia	·002

The following is a summary of stock killed for home consumption throughout the State. It does not include stock killed on farms and stations for private consumption.

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Bacon Factories	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Departmental Inspectors	51,566	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ARTHUR H. CORY, M.R.C.V.S.,
Chief Inspector of Stock.

APPENDIX [illegible]

SHEEP AND WOOL, 1937-1938.

Conditions at the commencement of the year under review were satisfactory throughout most of the sheep districts of the State, the exception being the [illegible] south-west and the north [illegible] portions including the Darling Downs. [illegible] and fairly general rains were experienced [illegible] spring and summer in which the Darling Downs [illegible] [illegible] and a good pasture growth resulted from warmth of weather both during and after the rain. Except in isolated places where sheep were weak and where the rain was very heavy and continuous, there were no flock losses as a result of the rain, [illegible]

In the [illegible] of the Central and Northern [illegible] [illegible]

Although a large proportion of the pasture lands of the State is in good order for this period of the year, wide areas are still subject to a prolonged dry spell. As the more favoured areas are conveniently situated, however, relief country has been available to many graziers. The [illegible]

[illegible] eating breed, age, and conditions suitable to the trade. The fat lamb scheme, which has been in operation for the past four years, has proved to be a valuable influence in raising breeding and fattening standards. Particulars of sales obtained from 35 farmers who have taken advantage of the scheme reveal the following results:—

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			s. d.	s. d.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]		[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		[illegible]		[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		[illegible]		[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		[illegible]		[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	182	[illegible]	[illegible]
[illegible]	[illegible]	697	[illegible]	[illegible]
Southdown	[illegible]	141	[illegible]	[illegible]
		[illegible]		[illegible]
All breeds		[illegible]		[illegible]

Adverse seasonal conditions caused a considerable variation in the ages—ranging from twelve weeks to eight months—at which the lambs were marketed. From the lambs consigned to Cannon Hill a monthly selection for export was made.

The number of lambs sold for slaughter during the year was approximately 12,000, of which [illegible] were selected for export.

High quality lambs have been exhibited at the Brisbane Exhibition and Toowoomba, Warwick and other country shows on the Downs.

In the all Australian export lamb competition conducted by the Australian Meat Board a Queensland producer obtained first place in the September series, and third highest in actual points over the whole competition.

Increased interest has been shown by farmers in many districts other than the Darling Downs in fat lamb raising, and the further extension of the industry is anticipated.

Improved management has tended to lessen internal worm infestation considerably.

Among merino breeders the culling of ewe flocks and the selection of suitable rams is receiving closer attention.

Values for store sheep receded from the beginning of the year, in sympathy with the gradual fall in wool prices. Dry weather also influenced values, which have been adjusted to normal levels since the autumn rains.

Health of the sheep generally has been satisfactory. Dry weather conditions acted as a check on parasitical infestation. Because of seasonal circumstances and careful management, blowflies were less troublesome. Crutching, jetting, and dipping at opportune times gave further protection. Sheep generally have maintained their condition, and although hard climatic conditions ruled in many areas, a steady natural increase in numbers is recorded.

During the season [illegible] bales of wool were catalogued at the Brisbane wool sales, of which [illegible] bales were sold, realising £[illegible].

FARMERS' WOOL SCHEME.

Under this scheme wool is accepted for classing in accordance with the following schedule:—

(*a*) Holdings of less than 1,500 merino sheep.
(*b*) Bags, mixed bales, and butts from any holding.
(*c*) Wool from crossbreds or British breeds from any holding.
(*d*) Star lots from selling agents.

In the course of the year 550 bales, as compared with 233 in the previous year, were classed on Owners' account and sold on their behalf. The average price, 9·86d. a lb., obtained compares favourably with the general average of the Brisbane wool sales for the year, especially when the fact that the quantity sold was supplied in small lots of widely varying types by 196 growers is taken into account.

In addition to the fat lamb scheme, sheep breeding trials are in progres at Atherton, Mackay, and Callide Valley.

Officers of the Sheep and Wool Section have judged at numerous shows in the course of the year.

PUBLICATIONS.

Articles and notes on flocks and fleeces were contributed regularly to the *Queensland Agricultural Journal* and *Weekly News Bulletin* in the course of the year. In addition, information on pastoral matters was supplied as required to the Press generally.

Radio lectures on subjects of interest to sheep and wool growers have been delivered regularly. Practical demonstrations in classing sheep and wool, and selecting rams and ewes for the breeding flock, has formed an important section of the service available to sheep owners on their own holdings.

JAS. CAREW,
Senior Instructor in Sheep and Wool.

APPENDIX B.

REPORT OF DEPUTY REGISTRAR OF BRANDS.

DETAILS OF REGISTRATIONS, TRANSFERS, &C., FOR YEAR 1937-1938.

—	Number.	Fees Received.			Number since Inception of Registration.
		£	s.	d.	
Three-piece brands registered	520	520	0	0	87,191
Cancelled brands reallotted	40	120	0	0	7,467
Symbol brands registered	30	225	0	0	1,422
Cattle earmarks registered	322	322	0	0	[illegible]
Brands transferred ..	1,708	854	0	0	54,339
Sheep brands and earmarks registered ..	272	191	5	0	12,468
Sheep brands and earmarks transferred ..	299	74	15	0	9,285
Distinctive brands registered	19	No fee			..
Alteration of Address of Brands	572	No fee			..
Brands cancelled (ordinary	15	No fee			
Brands cancelled special	6,787	No fee			.
Earmarks cancelled (ordinary)	99	No fee			.
Earmarks cancelled (special)	1,346	No fee			.
Total		£2,307	0	0	

There has been an increase in the registrations and transfers effected during the past year, and the fees received show an increase of £224 10s.

The cancellation of disused horse and cattle brands and cattle earmarks has now been completed, the number cancelled during the year being 6,787 brands and 1,346 earmarks. Altogether, some 30,000 brands and 4,400 cattle earmarks have been cancelled. These will become available for reissue when they have been out of use for a period of five years.

Attention is now being given to the cancellation of disused sheep earmarks and brands, and following the issue of formal notices of intention to cancel to owners in fifteen Brands Districts, 1,505 registrations have been cancelled. The main objective of these cancellations is to remove from the Registers and Directories any brand or earmark no longer required.

The action taken is not intended to penalise any owner, and should any brand or earmark which has been cancelled be required by the registered owner, an application for reinstatement will be treated favourably by the Department if application is made within a reasonable time.

During the year the Brands Acts were amended in several particulars, the chief amendment being the reduction of the size of branding irons to 2½ inches in length for horses and cattle.

Before the amendment, the size specified was not less than 1¼ inches in length or more than 3½ inches in length, while fully-grown stock could be branded with a brand not more than 5 inches in length.

By the amendment, the maximum size for all horse and cattle brands is restricted to 2½ inches in length, with the ultimate view of saving hides from excessive branding, which at present constitutes a severe loss of revenue to the State.

Swine have been exempted from the provisions of the Acts relating to earmarking. These animals were brought under the provisions of the Acts at a time when some means of identification were required by owners, but with the facilities now provided by the Pig Industry Act in regard to branding it was considered that swine-owners should have a freer hand in earmarking their animals, as under the Brands Acts they were required to conform to the same rules as are prescribed for sheep earmarking.

Provision was also included in the amending Act for stock bearing defaced brands or mutilated earmarks, and which stock had been seized for the purpose of a prosecution, to become the property of the Crown under certain conditions.

Other amendments were of a formal nature.

A number of warnings were given to offenders in connection with minor offences against the Acts, and proceedings were taken in one case and the defendant fined.

H. S. ILIFF,
Deputy Registrar of Brands.

APPENDIX C.

STAFF INSPECTOR'S REPORT.

Regular inspectional tours were continued in the course of the year. Seasonal conditions throughout most of the districts of the State were unusually good, particularly in the agricultural and dairying regions.

Field officers of the several branches maintained a high standard of efficiency.

The provisions of the Slaughtering Act have been well supervised and many improvements to butchering premises effected. A thorough inspectional service has been maintained at all bacon factories and the co-operation of inspectors in respect of animal disease control, particularly tuberculosis in swine, has contributed to the maintenance of health among farm and station stock.

The inspectional work of officers whose duty it is to see that the provisions of the Dairy Produce Act are observed has been well done. The benefits of improvements to premises as recommended, and instruction to dairy farmers on matters pertaining to high quality cream production, are shown in the excellent manufacturing results for the year. Improved road transport also has had an important influence on cream quality.

L. D. CAREY, Staff Inspector.

APPENDIX D.

"*The Veterinary Surgeons Act of* 1936."

REPORT OF THE VETERINARY SURGEONS' BOARD.

This Act came into force on the 11th March, 1937, and the following were appointed members of the first Board:—

> Professor H. R. Seddon, D.V.Sc., Dean of the Faculty of Veterinary Science, University of Queensland; A. H. Cory, M.R.C.V.S.; E. F. E. Sunners; J. Washington Irving, M.R.C.V.S.; and G. McKay, V.S.

The first Board held eighteen meetings up to the 28th February, 1938, which was the date fixed for the first election of two members as prescribed by the Act.

The retiring members were Messrs. J. Washington Irving and G. McKay, who were both eligible for re-election.

Five nominations were received and the election resulted in the return of Dr. J. Legg, M.R.C.V.S., and Mr. J. Washington Irving, M.R.C.V.S.

The term prescribed for the present Board is three years.

Up to the end of June last this Board has held five meetings, making a total of twenty-three since the inception of the Act.

A total of 131 applications for registration have been received. Of these, 74 have been approved, 53 refused registration, and 4 cases have yet to be finalised. Since the appointment of the Boards, 24 applicants and 3 witnesses have been interviewed.

It was necessary to make investigations into the majority of applications, and a considerable amount of corespondence was involved.

Of the 74 veterinary surgeons who have been registered, 25 hold diplomas or degrees in veterinary surgery (section 18 (1) (i.)); 19 hold diplomas from approved agricultural colleges (section 18 (1) (ii.)); and 30 were registered after having proved to the satisfaction of the Board that they had, previous to the commencement of the Act, been for a period of at least five years *bonâ fide* engaged in the practice of veterinary surgery in Queensland (section 18 (1) (iii.)).

An applicant who had been refused registration applied to the Full Court for the issue of a writ of mandamus commanding the Board to register him or, in the alternative, to show cause why the Board should not enter adjournments of his application to be registered.

After a short hearing, the Full Court refused to grant the application and ordered costs against the applicant.

H. S. ILIFF, Registrar.

REPORT OF THE DIRECTOR, ANIMAL HEALTH STATION, YEERONGPILLY.

The major portion of the work carried out during the year was in the nature of advice on matters pertaining to animal husbandry given to farmers and graziers throughout the State.

Whenever practicable, the services of a veterinary surgeon have been made available for the investigation of deaths among stock and the prescription of treatment, as well as for the devising of measures of disease prevention.

Vaccines for inoculations and other products of the Station have been despatched by aeroplane, when this service was suitable, in order to give farmers and graziers the quickest service possible. In all cases, orders have been supplied with promptitude. The routine work of the Station, as tabulated below, was much heavier than in the previous year.

SUMMARY.

	1937-38.	1936-37.
Mammitis vaccine	24,735	18,595
Blackleg vaccine	520	550
C.P.P. vaccine	74,295	66,725
Setons	11,425	14,000
Blood for tick fever inoculation	7,364	4,204
Bleeders	65	31
Stud animals stalled for inoculation	93	88
Specimens submitted	4,045	4,656
Inward correspondence	6,530	3,925
Outward correspondence	7,478	5,617
Contagious abortion samples received	3,142	3,924
Acaprin	2,954	581
B. pullorum antigen	sufficient for 46,000 birds	
Strangles vaccine	94	
Calf pneumonia vaccine	360	
Agar	400 tubes	
Eggs	2,369 dozen	
Fowls	160	

The remarkable increase in correspondence was due chiefly to extra orders for blood for tick-fever inoculation as a result of outbreaks of tick fever which were experienced in several districts after heavy rains had ended a prolonged dry spell.

Good results have been experienced from the use of autogenous and other vaccines manufactured at the Station. The C.S.I.R. preparation of contagious pleuro-pneumonia virus vaccine has continued to be used with very great success.

Special attention is called to the exceptionally large number of doses of blood supplied for tick-fever inoculation, and the number of bleeders prepared and sold for use at various centres as "reservoirs."

As a result of the numerous outbreaks of tick fever, the sales of acaprin have correspondingly increased. The value of this specific against some forms of tick fever is being realised more widely. It is used as a treatment for natural cases of tick fever, as well as for the control of severe reactions to tick fever after inoculation.

The number of samples of blood for serological agglutination tests received for the last twelve months shows a slight decrease, compared with previous figures. However, this is possibly an indication that contagious abortion is, to some extent, being checked, as a result of culling animals found on the evidence of a blood test to be affected with the disease.

An account of the general activities of the Station during the past year is given in the accompanying reports of Dr. F. H. S. Roberts, Dr. J. Legg, and Mr. Ross Nott. The report of the Acting Director of the Animal Health Station at Oonoonba also is appended.

J. A. RUDD,
Director.

STAFF REPORTS.

(1) ANIMAL ENTOMOLOGY AND PARASITOLOGY.

Specimens Examined.—A total of 388 specimens were received for identification.

Cattle Lice.—The results of a survey commenced early in 1937 showed that *Haematopinus eurysternus* is the most common and most important cattle louse in this State. *Linognathus vituli* is next in importance, but is confined chiefly to young stock and dairy breeds. *Solenopotes capillatus* and *Bovicola bovis* are also frequently met with. *Solenopotes capillatus,* which was previously thought to be a somewhat uncommon species, has been found, sometimes as a heavy infestation, at Goondiwindi, Maryborough, Grantham, Calliope, Theodore, and Longreach. *Haematopinus tuberculatus* has so far been seen on cattle only in the Gulf areas.

Heavy infestations of any species have been observed only during the winter and early spring and in drought times. When numerous under other conditions, their increase is associated with either unthriftiness or prolonged stabling. Lice are definitely harmful and cause noticeable loss in condition.

Experiments conducted at this Station have shown that *H. eurysternus* may be eradicated by spraying or washing with nicotine sulphate at the rate of 5 ml. nicotine sulphate (40 per cent. nicotine) to a gallon of water. At least two sprayings at an interval of fourteen days are necessary.

Further tests are being conducted in the field to ascertain whether nicotine sulphate and cresylic acid will be effective if added to the ordinary arsenic and soda cattle-tick dipping fluid.

Ephemeral Fever of Cattle.—The survey of biting insects present in the Yeerongpilly area has been continued. The insects were captured chiefly in a trap, using cattle as bait, but, in addition, the grounds of the Station were more or less regularly searched for biting insects.

The following biting insects were captured:—

Culicidae.

Culex annulirostris.
C. sitiens.
C. fatigans.
C. cylindricus.
C. bitaeniorhynchus.
Aedes vigilax.
A. vittiger.
A. notoscriptus.
A. argenteus.
A. normanensis.
A. alboannulatus.
Mucidus alternans.
Taeniorhynchus uniformis.
T. xanthogaster.
Anopheles annulipes.

Tabanidae.

Scaptia violacea.
Tabanus pallipennis.

Muscidae.

Stomoxys calcitrans.

Ceratopogonidae.

Culicoides spp. (three species unidentified).

Psychodidae.

Phlebotomus sp. (unidentified).

No attempts were made to carry out transmission work with any of these species, as no cases of the disease were available.

Dog Fleas.—During the latter portion of 1937 a survey was made of the species of fleas present on dogs in the Brisbane area. A total of 82 dogs was examined. Included in this number were dogs employed by the City Council for rat-catching, domestic dogs, and dogs from the Abattoir, Cannon Hill.

A total of 2,998 fleas were examined. The species present comprised—

	Per cent.
Ctenocephalides felis	65·17
C. canis	33·42
Pulex irritans	1·31
Nosopsyllis fasciatus	·07
Pygiopsylla congrua	·03

It is of interest to note that the cat flea, *C. felis,* was the dominant species, and that despite the fact that twenty-seven of the dogs examined were in constant association with rats, the only rat flea collected was *H. fasciatus,* which was taken in only very small numbers. *P. congrua* is a flea occurring on the native water rat.

These findings are in agreement with our experience regarding outbreaks of fleas in dwellings, stables, pig-sties, &c. The flea chiefly concerned is *C. felis.* Next in importance is *C. canis,* and finally *P. irritans.* This latter species appears confined to the coast, and is the species usually associated with outbreaks in seaside dwellings.

Stickfast Flea of Poultry.—The presence of this flea on dogs in south-eastern Queensland was recently recorded by the Council for Scientific and Industrial Research; As a result of this record, a survey of southern and western Queensland is at present being carried out by our Inspectors of Stock. This survey is incomplete. No trace of this pest has yet been found. Specimens of stickfast fleas from dogs at Texas and Miles proved to be *Echidnophaga myrmecobii,* a native stickfast flea occurring on marsupials and rabbits.

Haemaphysalis bispinosa.—The New Zealand cattle tick is becoming a serious pest of cattle in several north coast areas, and on one occasion was present in large numbers on sheep. It is not a vector of cattle-tick fevers so far as we know, but when sufficiently numerous can be responsible for severe "tick worry."

As it is a three-host tick, with long-lived larval, nymphal, and adult stages in the pastures, it is a very difficult pest to control.

Ornithodoros gurneyi.—A case was brought under our notice during the year where the bite of this species of tick was responsible for a serious systematic intoxication in a native stockman, causing vomiting, blindness, and unconsciousness, which lasted for about an hour.

Simuliids.—Our attention was recently drawn to the pathogenicity of these black flies among sheep in the central and south-western areas. The flies appear in swarms following the flooding of the rivers by the summer rains and viciously attack the sheep, congregating about the eyes and in the nostrils and ears. Serious losses among lambs have been reported. The species concerned have not yet been identified.

Gastro-Intestinal Helminths of Cattle.—The results of the survey in connection with the helminth populations of healthy cattle and of cattle suffering from parasitic gastro-enteritis will be published shortly.

Gastro-Intestinal Helminths of Sheep.—The hookworm, *Bunostomum trigonocephalum,* is now known to occur at Dalby, Mackay, Caboolture, and Brisbane. Only very light infestations have been seen.

It has been customary to accept the species of Trichuris occurring in sheep and cattle in Queensland as *T. ovis.* A recent examination of a large amount of material, however, has shown three species to be present—namely, *T. globulosa, T. ovis,* and *Trichuris* sp. (unidentified).

Helminths Poultry.—Further field tests over a period of a year have been conducted regarding the use of nicotine sulphate as a flock treatment for *Ascaridia galli* in fowls. The results are at present in the hands of the Departmental Statistician.

A number of cases of serious intestinal infestation among fowls with a species of Capillaria was encountered. The species concerned had been previously considered to be *C. collaris* (*C. retusa*), but a re-examination of all material in the Station collection proved it to be *C. columbae. Capillaria collaris* is also present in Queensland, but appears to be limited to the caeca, in which it has been seen in small numbers only.

Several cases of severe taeniasis in pigeons were seen. The species was identified by Dr. H. A. Baylis, of the British Museum, as *Raillietina Weissi.*

A survey has been commenced of the helminths infesting turkeys and ducks. The results to date indicate that these birds are surprisingly free from such parasites.

Hyostrongylosis in Pigs.—An outbreak of *Hyostrongylas rubidus* among a herd of pigs on the Atherton Tableland was reported by A. L. Clay, B.V.Sc., Government Veterinary Officer. Although the worm was known to be present in pigs in Queensland, this is the first time it has been reported as pathogenic.

Overseas Tour.—The writer is being sent by the Department on an overseas tour to study parasite control measures in the United States, Canada, England, Holland, and South Africa. He will leave Australia on 24th June, and will be away about seven and a-half months.

Publications.—In the course of the year the following articles were published:—

1. "Parasites of the Pig," Q'ld. Agr. J., Oct., 1937.
2. "Cattle Lice." *Ibid.*, Feb., 1938.
3. "Cattle Lice: Their Economic Importance in Queensland," Austral. Vet. J., XIV., 55.
4. "Nicotine Sulphate: Its Use in the Treatment of Cattle Lice" (in collaboration with Dr. J. Legg). *Ibid.*, XIV., 32.
5. "Onchocerciasis." *Ibid.*, XIV., 32.
6. "Studies on the Life Cycle and Economic Importance of *Heterakis gallinae* (Gmelin, 1790, Freeborn, 1923, the Caecum Worm of Fowls." Austral. J. Exp. Bio. and Med. Sci., XV., 429.

F. H. S. ROBERTS,
Entomologist and Parasitologist.

(2) TICK FEVER IMMUNISATION.

Inoculation against the tick fevers has been continued along the lines previously laid down. Four types of tick-borne blood parasites are known in this country. Excluding *Theileria mutans,* which seems to be harmless, the other three, *Babesiella argentinum, Piroplasma bigeminum,* and *Anaplasma marginale,* are all associated with outbreaks of tick fever in the field. The important feature of the large number of outbreaks during the last eight months has been the preponderance of fatalities due to *B. argentinum.* This is remarkable, because this parasite was not known in this country until about five years ago. More than 90 per cent. of outbreaks are now recognised as being due to this particular type of organism, and it is the one to which most attention has to be paid in the vaccination of cattle.

Up to the present we have used a vaccine containing *P. bigeminum* of Australian origin and *A. centrale* from South Africa. Under conditions of experimentation we have found that carriers of *P. bigeminum* are resistant to infection with *B. argentinum,* though the converse does not hold good. For this reason *B. argentinum* has been excluded from the vaccine. There has, however, been some evidence recently which indicates that animals artificially inoculated with *P. bigeminum* are not always resistant to natural infection with *B. argentinum.* This will make the vaccination of cattle possibly more difficult in the future. The introduction of a third organism into the vaccine is undesirable and to be avoided if possible, particularly an organism like *B. argentinum,* whose "concentration" in the blood of carriers appears to be very low. The matter of introducing this organism into the vaccine used in the field is at present under consideration.

The heavy rains, the hot weather of the recent summer, and the consequent increase in ticks has produced crops of outbreaks of tick fevers in the field, and nearly always in weaner cattle. These "weaners" represent cattle which calved during the recent long drought, and they have grown up, as it were, on what was practically clean country so far as ticks were concerned. Now they have reached, or are reaching, the adult stage they are becoming infested with ticks, and outbreaks of disease have followed. In Queensland we are unfortunate in that very much of the best breeding country is only lightly infested with ticks, and many cattle do not acquire infection with these blood parasites in their calfhood days; hence they acquire no resistance. If infected as they often are after reaching adult life, mortalities are often high.

Acaprin has been widely used in the field, and has been found to be very useful. It seems to be effective against natural babesiellosis if used in time. It has undoubtedly reduced the losses in stock since its introduction.

It is interesting to note outbreaks of babesiellosis have been recently noticed in calves as young as four months.

J. LEGG,
Senior Veterinary Officer.

(3) VETERINARY FIELD WORK.

Routine work at the Animal Health Station included assistance in poison plant experimental work and tick-fever inoculation; examination of specimens and the care and treatment of animals, other than bovines, admitted to the Station. In collaboration with others, experimental work has also been carried out on "Q" fever, ephemeral fever, haemorrhagic septicaemia of bovines, pneumonia of pigs, spirochaetosis in pigs, the effect of various blow-fly dressings in sheep, labial dermatitis in lambs. fertilizer trials with dolomite, "swamp cancer" in horses, foot-rot in rams, and oedema of cattle.

Among the rarer specimens examined were:—A bone showing porphyrinuria, viscera from cases of haematuria in calves, leucaemia and neurolymphomatosis of fowls, and specimens from a bull which had failed to give a positive reaction to the subcutaneous tuberculin test, and which on examination proved to be tuberculous.

Of specimens examined for suspected poisons, the great majority proved to be positive for arsenic, which is not surprising considering the wide-spread use of this drug, but the fact emerges that not sufficient care is shown in the handling and storage of this particular drug.

Other activities included lectures to visiting students at Yeerongpilly, and local producers' associations, and investigations relating to animal health for other Government departments, and duty attendance at parades in respect of Stallion Board examinations and registrations.

A wide range of field work included investigations into deaths and diseases of all classes of stock in all districts within the Station's sphere of service.

Among the principal diseases investigated were:—Contagious pleuro-pneumonia in cattle; tuberculosis in cattle and pigs; contagious abortion in cattle with hygromata; pneumonia in pigs; spirochaetosis in pigs; traumatic pericarditis in cattle; lantana poisoning in cattle; babesiellosis and anaplasmosis in cattle; haemorrhagic septicaemia in relation to bracken poisoning in cattle; deficiency diseases in cattle and pigs; an oedematous condition of the subcutaneous tissue of the head, neck, brisket, and forelimbs of cattle; poisoning of cattle by diplodia zeae; mortality in sheep after drenching with a proprietary mixture of carbon tetrachloride; spirochaetosis in fowls; poisoning in cattle by a cyanogenetic glucocide after pasturing on sorghum; a contagious bronchitis of fowls; saw-fly caterpillar poisoning in cattle; diarrhœa in horses; joint ill in calves; blackleg in calves; arsenical poisoning in cattle; laminitis and strangles in horses; and foot-rot in rams.

Diagnostic work has also been done in relation to a claim for a cancer cure.

ROSS NOTT,
Government Veterinary Officer.

(4) ANIMAL HEALTH STATION, OONOONBA.

A much greater volume of work was performed at the Animal Health Station, Oonoonba, than during the previous year. This was, in part, because of the fact that the activities of the station have become more widely known and to the co-operation of field officers who, in addition to collecting and submitting specimens, have been advising the pastoralists and farmers to submit their animal health and animal production problems to the station for help and advice. In addition to the work intimately associated with the station, the veterinary services and control of animal diseases in North Queensland were administered from Oonoonba.

The principal activities of the Oonoonba Station comprised—

(i.) Routine diagnoses.
(ii.) Research work on animal disease and animal production.
(iii.) Poison plant investigations.
(iv.) Immunisation of cattle against tick fever.
(v.) Preparation and distribution of vaccines.

Routine Diagnoses.

As in the previous years, specimens from outbreaks of disease in cattle were more numerous than from other animals, and they comprised 75 per cent. of the total received. Specimens submitted in connection with outbreaks of diseases in other animals were—Sheep, 10 per cent.; horses, 6 per cent.; dogs, 5 per cent.; and miscellaneous, 4 per cent. In addition to pathological specimens, a large number of plants and insects were also received. The diseases of most economic importance from which specimens were received for diagnosis were bovine tick fever, contagious pleuro-pneumonia of bovines, buffalo fly (*Lyperosia exigua*) infestation of bovines, contagious mammitis of bovines, contagious abortion of bovines, tuberculosis of bovines and pigs. The following also are some of the more common diseases diagnosed:—Swamp cancer in horses, contagious pneumonia in swine, external and internal parasites of sheep and cattle, ulcerative spirochætosis of pigs, ephemeral fever, lantana poisoning, arsenical poisoning, calf pneumonia and white scours, actinomycosis, tetanus, fowl pox, and botulism in birds.

Research Work on Animal Disease Problems.

Tick Fever.—Further work was carried out to test and confirm previous results of the value of acaprin and piroblue in the treatment of both experimental and natural cases of tick fever. Several bovines were infected by means of blood inoculation with *P. bigeminum,* and following production of the disease treatment was carried out on both splenectomized and non-splenectomized animals. In all cases treated with acaprin and with a 1 per cent. aqueous solution of piroblue used intravenously, satisfactory results were obtained, for there was a pronounced reduction in temperature and elimination of organisms from the peripheral blood within twenty-four hours. No pronounced toxic symptoms were noted following the use of either drug, but acaprin had a slightly depressing effect, which was most noticeable from two to twelve hours after treatment. Piroblue was also used in a 2 per cent. solution subcutaneously and in a 2 per cent. solution intravenously, but the results from these methods of treatment were not as satisfactory as when a 1 per cent. solution was used intravenously. In addition, a 2 per cent. solution when used subcutaneously was inclined to produce sloughs and abscess formation.

Acaprin was used in the treatment of babesiellosis, both in experimental cases produced by blood inoculation and natural cases produced by ticks in the field. In the former, treatment was carried out on splenectomized animals at an advanced stage of the disease, and it was successful in preventing death and promoting recovery in every case. As with piroplasmosis, the temperature usually dropped within twenty-four hours of treatment, but the organisms persisted in the peripheral blood for some days. On two occasions a comparatively large number of animals was treated in the field following a natural outbreak of babesiellosis, and, although some mortality had occurred and a large number of the animals were showing pronounced symptoms of tick fever, in each instance the treatment with acaprin was successful in controlling the outbreak. In occasional cases it was found necessary to administer the second treatment twenty-four hours after the first. Although no untreated controls were kept in field cases, the results suggest that acaprin has a definite value in the control of natural cases of babesiellosis.

Investigation on Resistance to B. Argentinum following Inoculation with P. Bigeminum.—During the year under review seventy-two stud cattle from tick-free pastures were inoculated with the standard tick fever vaccine, containing the organisms *P. bigeminum* and *A. centrale.* These animals, after undergoing reactions, were transferred to tick-infested pastures and kept under observation by departmental officers or the owners to collect information on the degree of resistance to babesiellosis resulting from the inoculation. The observations indicated that a large percentage of the animals developed a solid resistance to tick-borne babesiellosis, but in a small number of cases the resistance was broken down and an attack of babesiellosis followed. All such cases which were treated with acaprin recovered, but two of four animals which were not treated died as a result of this disease.

Observations on the Possible Transmission of Anaplasms in a Tick-free Environment.—The experiment, being carried out at the Animal Health Station in co-operation with the Council for Scientific and Industrial Research, in which animals susceptible to anaplasmosis have been housed in a tick-free environment in contact with known carriers of *A. marginale* and *A. centrale,* has advanced a further stage. During the twelve months' period all the animals have been kept under close observation without evidence of anaplasmosis being detected in the susceptible animals.

Observations on Mineral Deficiency Diseases.—Further progress has been made in the experiment carried out in co-operation with the Council for Scientific and Industrial Research to test the value of feeding mineral supplements containing phosphorus to cattle and to ascertain the most suitable method of administration. This work is being carried out at the Helenslee Field Station in an area of deficient country to the south-west of Charters Towers.

Investigations into an Outbreak of Botulism in Birds.—An investigation was carried out into a mortalty affecting fowls and wild game in the Townsville district. The symptoms in the bird resembled botulism, and organisms obtained from the diseased birds, on being cultured, produced a toxin which, when given to small laboratory animals in minute doses, either subcutaneously or per os, produced a disease resumbling botulism. Work is now in progress to identify the strain of the organism concerned.

RESEARCH WORK ON ANIMAL PRODUCTION.

During the twelve months under review observations were carried out into beef production on specially prepared pastures on the coast in the Tully and Innisfail areas, and on natural pastures in the Charters Towers district. The Tully and Innisfail districts are in that portion of the coast known as the "wet belt" and have an annual rainfall in the vicinity of 150 inches. Most of this is recorded in the late summer and autumn, but the rainfall over the remaining seasons is sufficient to ensure a good growth of grass at all times, and our observations have indicated that, with suitable management, cattle continually improve and can be marketed in prime condition at any time of the year.

In the Charters Towers district, the annual rainfall is approximately 20 inches, and this mostly falls in the summer and autumn, with the result that there is an abundance of feed in the autumn and cattle improve in condition until the advent of the cold weather, when they receive a check and then gradually decline until the beginning of the next wet season. Under these circumstances cattle can only be marketed to best advantage in the late autumn and early winter.

The special pastures in the Tully experimental area were made up chiefly of Para Grass (*Panicum muticum*) with a small percentage of Molasses Grass (*Melinis minutiflora*) and Guinea Grass (*Panicum maximum*). The area comprised approximately 200 acres, divided into four paddocks. The stocking rate was one beast to 2 acres and rotational grazing was practised. Thirty-eight bullocks were marketed during the period and all were shipped overseas as chilled beef. Ninety per cent. of the carcases were graded as first quality and 10 per cent. as second quality.

POISON PLANTS INVESTIGATIONS.

Andrachne Decaisnei.—Feeding trials indicate that both the green portion and watery extract of the plant are on occasions toxic for sheep and goats. Field evidence indicates that the plant is more dangerous when young than when fully matured.

Cycas Media.—Feeding trials were carried out with the green fruit and leaves of this plant. The tests indicated that the green fruits must be looked upon with suspicion. A steer was used in this trial and it suffered from a severe gastroenteritis as a result of feeding on the fruit. Although the animal survived, it lost a considerable amount of weight. Forty-three pounds of mature leaves were fed to a second steer over a period of thirteen days without any apparent ill-effects.

Dactyloctenium Radulans.—A trial under natural conditions of grazing was carried out with sheep. Sheep were grazed on a small area of an almost pure stand of this grass and a large quantity was consumed without producing any ill-effects in the sheep.

Crotalaria spp.—Trials with sheep, using leaves, seed pods, and watery extracts of both were carried out with negative results.

Damaged Corn Cobs.—A feeding trial was carried out with material submitted from the Atherton Tableland. The damaged corn cobs, affected with a fungus, when consumed by horses are thought to produce a condition of staggers. The subjects used in the trial included a horse, a pig, and two steers. The results were negative, although it was not proved that the fungus affecting the cobs was *Diplodeæ zeæ*. The latter has been reported to cause staggers in horses.

IMMUNISATION OF STUD CATTLE AGAINST TICK FEVER.

Seventy-two stud cattle, chiefly bulls, of the beef breeds were inoculated and passed through their reactions at the Animal Health Station during the period under review. There were no losses as a result of the inoculations, but a large percentage of the animals required treatment to control severe reactions.

In the majority of cases a solid resistance to tick-borne organisms was produced, for no evidence of sickness could be detected in approximately 80 per cent. of the animals following their removal to tick-infested pastures.

PREPARATION AND DISTRIBUTION OF VACCINES.

Sixty-five thousand doses of contagious pleuropneumonia vaccine prepared by the Council for Scientific and Industrial Research were distributed from the station during the year. This was used chiefly for the preventive inoculation of store cattle prior to their being removed to fattening pastures from breeding country.

Eight hundred doses of tick fever vaccine were forwarded from the station to various owners in North Queensland for inoculation against this disease. Portion of this vaccine was used to inoculate susceptible stock prior to their transfer from tick-free to tick-infested pastures, whilst the remainder was used for inoculation in lightly tick-infested country, where outbreaks of tick fever had been encountered from time to time. In addition, two reservoirs were supplied to a station in the Cloncurry district for the inoculation of 4,000 cattle following an outbreak of tick fever in the vicinity of that station.

Five hundred and fourteen doses of autogenous contagious mammitis vaccine were prepared at the station and supplied to dairy farmers in the North Queensland area.

ADMINISTRATION OF VETERINARY SERVICES AND CONTROL OF ANIMAL DISEASES IN NORTH QUEENSLAND.

The North Queensland area is divided into three main districts for the purpose of veterinary administration—a Northern Division with headquarters at Atherton, a Central Division with headquarters at Townsville, and a Western Division with headquarters at Cloncurry. During the previous year veterinary officers were stationed at the headquarters of each division, but early in the present year the officer from Cloncurry was transferred to Townsville and at the present time the field work for the Western Division is being organised from the Animal Health Station, Oonoonba.

Beef cattle form a large percentage of the animal population of North Queensland, and the diseases of greatest economic importance which call for attention for prevention and control are contagious pleuro-pneumonia, tick fever, and tick infestation, and buffalo fly infestation.

Contagious Pleuro-pneumonia.—Twenty outbreaks of contagious pleuro-pneumonia were reported during the year. In each instance the disease was brought under control by quarantine and inoculation of all in-contact animals. Eighteen of these outbreaks occurred along the coast in the vicinity of stock inspectors' headquarters.

Large numbers of encapsuled lesions were detected in meatworks and slaughter-house inspections of cattle coming from the Gulf and Peninsula areas, and although no outbreaks have been reported from these centres the disease is undoubtedlly present in this area is an enzootic form. However, it is kept under control in travelling stock by inoculation. Outbreaks of contagious pleuro-pneumonia in inoculated stock are rare, and when they do occur the morbidity rate is low. Two such outbreaks were reported during the season.

Bovine Tick Fever and Tick Infestations.—Numerous outbreaks of this disease were again reported. Most of the outbreaks occurred at the junction of tick-free and tick-infested country following an increase in the area of tick infestation after the wet season. Most trouble was experienced in the Atherton, Georgetown, Charters Towers, and Cloncurry districts.

A mortality of approximately forty head was reported from one station, but it is considered that the losses were much heavier on several other properties, and it is difficult to form an accurate estimate of the total losses from this disease.

In all field cases it has been ascertained that the organism *B. argentinum* was responsible for the disease. Only one case of tick fever other than babesiellosis has come under our notice and that was a case of anaplasmosis (*A. marginale*) in a bull at Townsville.

Inoculation with blood containing *P. bigeminum* and *A. centrale* has been practised as a method of control when outbreaks are anticipated or for susceptible stock prior to removal to tick-infested country, and treatment with acaprin is now widely practised to control the disease after it has appeared.

Tick infestation remained fairly light from July to December, but was heavy from January to May. Dipping was carried out right throughout the year along the coast, but in the inland areas it was often unnecessary to dip during the drier months.

Buffalo Fly Infestation of Bovines.—A survey to gain information on the incidence of buffalo fly in North-western Queensland was carried out during the months of April and May. Approximately forty properties were visited and fifteen were found infested. At the time of the survey the area of infestation was not so widespread as during the previous season and it was bounded in an easterly direction by the Leichhardt River and it extended about 50 miles from the coast to the south of Burketown. However, the parasite was carried to the railhead at Kajabbi by travelling stock towards the end of May and this centre remained infested until the last week in June. This necessitated the spraying of all stock with a repellant solution immediately prior to trucking from that centre during the period of infestation. As an additional precaution all cattle trucks from Kajabbi were cleaned by a high-pressure steam spray at their destination.

Tuberculosis of Bovines and Swine.—Information collected during the year indicated that the percentage of cattle and pigs infected with tuberculosis in the North Queensland area is very low. However, it is known that the disease is prevalent on certain properties.

During the year eleven new herds were submitted to the test in terms of the tubercle-free herd scheme in seven different centres. Tuberculin-tested herds are now available at Mackay, Ayr, Townsville, Ingham, Cairns, Mossman, and Yungaburra. The number submitted to the test for the first time was 875, comprising eleven herds. Reactors were found in only two herds—one in Townsville and one in Yungaburra. Six herds in the Cairns and Mackay districts were re-tested and one reactor was found out of 782 animals tested. The total number tested was 1,158, from which only four definite reactions were obtained, or a percentage of 0·4. However, this is very probably an understatement, since owners with heavy infestations are in general unwilling to submit their herds to the test, and special examinations in a few known infected herds has incriminated as many as 30 per cent. of the animals.

"Follow-up" work in connection with the control of tuberculosis is being continued, and during the year, following the marketing of diseased pigs, infected cows were detected in herds in the Mackay and Atherton districts.

Ephemeral Fever.—Cases of this disease were reported throughout the area, but never did it attain the epizootic proportions assumed previously. One outbreak occurred at Charters Towers in September with four deaths and a very high morbidity rate, but this was unusual. In addition to several cases along the eastern coast, the disease was also reported from Georgetown and Normanton.

Contagious Mammitis of Bovines.—This disease exists throughout the dairying districts and improved hygiene and vaccination are being recommended to control it. Five hundred and fourteen doses of autogenous vaccine were despatched to stockowners.

Contagious Abortion of Bovines.—This is widespread in the dairying districts, and agglutination tests have been carried out on blood sera to eliminate reactors. An experiment using wheat germ oil (Vit. E) as a palliative against the effects of *B. abortus* was carried out at Atherton, but results to date have not been encouraging.

Blackleg in cattle was reported from Mackay, Bowen, and Mount Nebo.

A survey of cattle lice established the presence of the sucking louse (*H. eurysternus*) at Mount Nebo, Charters Towers, and Georgetown.

Diseases of Pigs.—Contagious pneumonia of pigs, due to *P suiseptica*, was the most common disease in coastal areas. Cases of spirochætosis, otitis media, and muscular incoordination were also reported. One outbreak of suspected poisoning with marked gastro-enteritis was reported in the Townsville district. Deaths were also reported from the stomach worm (*Hyostrongylus rubidus*) and the kidney worm (*S. dentatus*).

Diseases of Sheep.—Cutaneous myiasis was very prevalent in the Hughenden and Julia Creek districts during July after winter rains. Both body and crutch strikes were encountered. Sheep lice were found in the vicinity of Prairie, Hughenden, Torrens Creek, and Atherton. The sheep ked (*M. ovinus*) was discovered at Atherton, but was eliminated by dipping. Several outbreaks of plant poisoning in sheep were reported.

Diseases of Horses.—Deaths due to tetanus were experienced in the Atherton and Townsville districts. A typical outbreak of strangles with two deaths was reported from Atherton. One case of arsenical poisoning and an unconfirmed outbreak of walk-about disease were reported.

A disease characterised by colic, scouring, and inappetence, probably similar to that occurring in Southern Queensland in 1936, was reported from Ayr and Tully.

Diseases of Dogs.—Filariasis was again commonly met with in Townsville. Canine hysteria is prevalent throughout the Townsville and Charters Towers districts and two cases were submitted to this station for observation.

Diseases of Birds.—An outbreak of botulism occurred amongst wild game and fowls in the Townsville district, but was controlled by the hygienic disposal of carcases and timely rainfall. Spirochætosis was reported from Hughenden and fowl pox from Townsville and Atherton.

C. R. MULHEARN,
Acting Director.

REPORT OF THE VETERINARY ADVISER.

The following comments are offered regarding Departmental activities with which I have been associated during the past year. This has been chiefly in an advisory capacity—though in certain directions some executive authority has been exercised. Reports and comment have been submitted on a number of matters referred to me specifically for that purpose, but brief mention may be made of the following:—

1. Administration of Animal Health Services.

Throughout the year the co-ordination of the animal health services in North Queensland under the direction of Mr. C. R. Mulhearn has been maintained, field and other advisory work being very usefully linked up with research work at Oonoonba. The veterinary staff has been strengthened by two new appointments, but as two others had resigned a short time previously the staff is all too small for the needs of so large a State. There is need, moreover, for full co-ordination of the whole of the Departmental activities concerned with animal health, and it is pleasing to know that this is shortly to come about.

2. Research.

Problems of veterinary and parasitological research have been discussed with officers concerned and arrangements made to facilitate the work, co-ordinating it where necessary with that of other officers. A general supervision has been exercised over such work and it is pleasing to record an advancement of knowledge in several directions.

(*a*) *Ephemeral Fever.*—Since the first visitation of this disease in 1936, extensive investigations into the animal side have been carried out at Oonoonba and on the possible insect vectors at Yeerongpilly. Arrangements were made for further investigations to be carried out in the North, these being designed to throw light on the mode of transmission, but owing to the very low incidence of the disease during the past year the type of experiments planned could not be carried out. Very useful observations have, however, been carried out by Dr. F. H. S. Roberts at the Animal Health Station, Yeerongpilly, who, by trapping, now has a complete year's record, month by month, of biting flies which would naturally attack housed stock, and has by other means conducted periodical surveys of the seasonal prevalence of other biting insects which would not enter such traps. Data of this nature, as pointing to the possible vector, was wholly lacking when the disease first appeared, and as a record of insect incidence is very valuable. In addition, mention may be made of the fact that the writer recently published a complete record, as obtained from official field reports, of the geographical distribution of the disease during its initial spread throughout Australia.

(*b*) *Sawfly Poisoning in Stock.*—The fact that stock in a certain area of Southern Queensland become poisoned from eating the larvæ of sawflies has for long been known, but the nature of the poisonous substance has remained a mystery. As a preliminary to other investigations certain field trials and laboratory experiments have been undertaken which go to show that the poison is of a complex nature and as yet there is no clue to its identity. From toxicity tests on stock it is evidently not botulinus toxin as had originally been suggested.

(*c*) *Coastal Fattening.*—In accordance with the direction of the Hon. the Minister, a comprehensive set of field trials was inaugurated in the Tully-Innisfail districts, the animal side of the work being under the direction of Mr. C. R. Mulhearn (Acting Director of the Animal Health Station at Oonoonba), assisted by Mr. J. B. Sheahan, whilst pastoral investigations and chemical problems are simultaneously being investigated by other Departmental officers.

A very happy co-operation of effort between these officers and the stockowners concerned has resulted, and not only have first-grade chillers been turned off these pastures, but important data of a fundamental order have been obtained. One truck of the cattle (which incidentally were from various sources, including animals of Peninsula type) were sent by rail to Brisbane, so that observations not possible in the North could be made. Thanks largely to the fact that the truck in which these cattle were transported had been specially padded, there was an entire absence of bruising and 80 per cent. of quarters were graded first class for chilling. A further truck sent to a northern works turned out even better —97·5 per cent. of the quarters reaching this high standard.

These observations are being continued and extended, and show every promise of an important advance in chilled beef production, but it might here be stressed that to produce the article required due care must be paid to the breeding and conformation of the stock, and a proper system of pasture management undertaken. Results to the present show that it can be done and there is every reason to believe, moreover, that the proper development of such a scheme will do much to obtain a continuity of supply of suitable fat animals for the Queensland chilled beef trade.

(*d*) *Contagious Bovine Pleuropneumonia.*—The results of field vaccination with the vaccine prepared by the C.S.I.R. have been followed up and thus that very necessary co-operation between the laboratory worker and the stockowner maintained.

(*e*) *"Q" Disease.*—Owing to the possible association of this disease of man with food-producing animals, co-operative investigations between the Department of Health and this Department have been arranged. Present results indicate that this disease has its natural reservoir in some wild bush animal and not in domesticated stock as was at one time thought possible.

(*f*) *Tick Fever.*—Though the present system of vaccination, devised by Dr. Legg of this Department (when on loan to the C.S.I.R.), has in general been adequate, some breakdowns have unfortunately occurred, and a comprehensive series of experiments in an attempt to improve on this are now in train. Such involves long and painstaking research and early results are not to be expected. Moreover, such work is costly, as it can be carried out only on cattle, which have to be individually housed and fed.

(*g*) *Poison Plants.*—Thanks to the granting of funds by the Australian Wool Board, poison plants are now the subject of a comprehensive series of investigations from the chemical, veterinary, and botanical espects, the work being done by departmental officers under a committee representative of the Department and the University, under my chairmanship.

(*h*) *Parasites of Stock.*—As will be seen by reference to the Annual Report of the Director of the Animal Health Station, Yeerongpilly, important investigations have been carried out on lice in cattle and gastro-intestinal parasites of stock.

3. GENERAL.

It has been the privilege of the writer to represent the Department on the State Committee of the C.S.I.R., and the Townsville Cattle Disease Research Committee, whilst he also represented Queensland at the recent Conference of Commonwealth and State Veterinary Officers. Contacts such as these are most valuable as maintaining a liason with the activities cf other bodies, whilst through such means important co-operations have been attained.

H. R. SEDDON,
Veterinary Adviser.

Brisbane, 21st July, 1938.

REPORT OF THE SEEDS, FERTILIZERS, VETERINARY MEDICINES, PEST DESTROYERS, AND STOCK FOODS INVESTIGATION BRANCH.

INSPECTIONAL DUTIES.

In the course of the year, in addition to the supervision exercised in Brisbane, visits were made to the following places by inspectors under the several Acts administered by this Branch; the figures following each place set out the respective number of visits made:—Alligator Creek, 1; Allora, 1; Aspley, 1; Atherton, 1; Ayr, 1; Babinda, 1; Bundaberg, 1; Blackstone, 1; Bowen, 1; Cairns, 1; Childers, 1; Cooran, 1; Cooroy, 1; Eumundi, 1; Garbutt's Siding, 1; Gayndah, 1; Gordonvale, 1; Gympie, 2; Home Hill, 1; Ingham, 1; Innisfail, 1; Ipswich, 1; Malanda 1; Mareeba, 1; Millaa Millaa, 1; Mundubbera, 1; Nambour, 1; Oakey, 1; Ross River, 1; Runcorn, 1; Toowoomba, 2; Townsville, 1; Tully, 1; Warwick, 1; Yandina, 1; Zillmere, 1.

This year thirty-six places were visited, with two return visits, against last year's thirty-six, with five return visits.

Return visits are usually made to enable suitable action to be taken to remedy matters that were found to be out of order—such as the disposal of seed that does not comply with the prescribed standards.

When it is realised that practically every storekeeper in Queensland sells seeds, fertilizers, veterinary medicines, pest destroyers, and/or stock foods, the question of policing the Acts is seen to be a problem of some magnitude. With the extra assistance recently made available and now in training it is expected, however, to be in a position to gradually tighten up the application of the Acts.

CORRESPONDENCE.

In the course of the period under review outward correspondence amounted to 4,794 pages and 1,244 roneos. Quite a considerable amount of typing in addition to the above correspondence was carried out.

PUBLICATIONS.

The following contributions by members of this Branch were made to the "Queensland Agricultural Journal":—"Seeds Every Farmer Should Know—Dodder"; "The pH Scale"; "Fertilizer Facts for Farmers"; "Sale of Seeds Regulatory Legislation"; "Setaria (Panicum)"; "Lime on the Farm"; "Dusting Mixtures for Pest Destruction"; besides twenty-one contributions to the "Weekly News Bulletin."

ACKNOWLEDGMENTS OF SERVICES RENDERED BY OTHER DEPARTMENTAL OFFICERS.

Five hundred and twenty-nine samples were analysed for this Branch by the Agricultural Chemist, an increase of 104 over last year.

Considerable assistance has been rendered to this Branch by officers of the Stock and Fruit Branches, particularly the former in relation to administration of the Veterinary Medicines Act.

CO-OPERATION WITH HEALTH DEPARTMENT.

In the administration of the various Acts administered by this Branch, considerable care is taken to ensure that labels printed to comply with the requirements of such Acts also embody requirements of the Poisons Regulations under the Health Acts and requirements of any other Acts concerned. Dealers are referred to the Health Department for advice on matters concerned.

It is desired to acknowledge reciprocal action on the part of officers of the Health Department. The transfer of the Health Department from Hope street, South Brisbane, to William street has added considerably to the convenience of this exchange of services.

SEEDS ACTS, 1937-1938.

During the year 5,953 samples were examined at the Seed Testing Station, the actual tests carried out numbering 6,733. The following table gives details of the figures concerned:—

Seed Samples Received from—	Number of Samples.
Seed vendors	1,355
Growers selling seeds	141
Inspectors under the Seeds Acts	2,144
Inspectors under the Commerce Acts ..	2,005
Farmers who have purchased seed for their own sowing (examined free)	89
Government Departments	219
Repeat and experimental tests	780
Total germination tests	6,733

The number of seed samples received from vendors and inspectors under the Act has increased by 415 and 973 respectively over the previous year's figures. The total of germination tests shows an increase of 854.

FAULTY SEEDS FOR SOWING.

The following table sets out the action taken under supervision of an inspector with respect to seeds which were offered for sale as seed for sowing, and were found not to comply with the standards prescribed on account of the reasons set out :—

Lots.	Quantity.	Kind of Seeds.	Reasons for Action.	Action Taken.
1	50 lb.	Barley, Cape	Weevil infested	Recleaned
1	112 lb.	Beans, Canadian Wonder	Low germination	Sealed and seized
2	7 bags	Beans, Canadian Wonder	Low germination	Destroyed
1	1 bag	Beans, Canadian Wonder	Insect infested	Destroyed
1	½ bag	Beans, Canadian Wonder	Insect eggs	Fumigated
4	3 bags	Beans, various	Low germination	Destroyed
1	25 lb.	Beet	Low germination	Sealed and seized
3	4½ lb.	Beet	Low germination	Destroyed
23	41 lb.	Cabbage	Low germination	Destroyed
1	9 bags	Canary seed cleanings	Contained Datura	Sealed and seized
7	30 lb.	Carrot	Low germination	Destroyed
19	17¼ lb.	Cauliflower	Low germination	Destroyed
7	129 lb.	Clover	Low germination	Destroyed
1	35 lb.	Cocksfoot	Low germination	Destroyed
8	11½ lb.	Cucumber	Low germination	Destroyed
1	60 lb.	Johnson grass	Prohibited	Destroyed
2	1½ lb.	Leek	Low germination	Destroyed
12	32½ lb.	Lettuce	Low germination	Destroyed
1	160 lb.	Lucerne	Contained dodder	Sealed and seized
1	25 lb.	Lucerne	Low germination	Destroyed
1	5 bags	Mangel	Low germination	Sealed and seized
4	53 lb.	Mangel	Low germination	Destroyed
9	17¼ lb.	Marrow	Low germination	Destroyed
19	47½ lb.	Melon	Low germination	Destroyed
1	3½ bags	Millet, Japanese	Low germination	Withdrawn from sale
1	1 bag	Oats	Excess weed seeds	Recleaned
1	2 bags	Oats	Excess wild oats	Withdrawn from sale
10	64 lb.	Onion	Low germination	Destroyed
4	12 lb.	Parsnip	Low germination	Destroyed
3	90¼ lb.	Peas	Low germination	Destroyed
1	5¼ lb.	Prairie grass	Low germination	Destroyed
1	4 bags	Prairie grass	Excess inert matter	Sealed and seized
3	1¾ bags	Pumpkin	Low germination	Sealed and seized
9	1¾ bags	Pumpkin	Low germination	Destroyed
5	13 lb.	Radish	Low germination	Destroyed
2	1 bag	Rosella	Low germination	Destroyed
3	167 lb.	Rye grass	Low germination	Destroyed
2	92 lb.	Rye grass	Low germination	Sealed and seized
1	1 bag	Setaria	Excess inert matter	Recleaned
1	24 bags	Setaria	Contained Datura	Sealed and seized
2	2 bags	Sorghum	Low germination	Destroyed
1	26 lb.	Sorghum	Low germination	Sealed and seized
4	8½ lb.	Spinach	Low germination	Destroyed
1	12 bags	Sudan	Low germination	Sealed and seized
6	26¾ bags	Sudan	Contained Datura	Sealed and seized
3	17½ lb.	Swede	Low germination	Destroyed
1	8 lb.	Tares	Low germination	Destroyed
10	10½ lb.	Tomato	Low germination	Destroyed
4	14¾ lb.	Turnip	Low germination	Destroyed
1	2 bags	White Panicum	Contained Datura	Sealed and seized
2	8 bags	White Panicum	Low germination	Withdrawn from sale
18	24½ lb.	Miscellaneous	Low germination	Destroyed

Miscellaneous consists of :—Celery, Chou Mollier, Cress, Kale, Parsley, Rhubarb, Rib Grass, Sage, Squash, Swiss Chard, Timothy Grass.

Farmers who have purchased seeds for their own sowing have availed themselves of the "free examination and report" service to the extent of eighty-nine samples, an increase of sixty-five over last year.

In this connection some of the samples received related to seeds purchased over twelve months previously, in which cases it should be noted it is not possible to take any action against the vendors if the material is below standard—even if it contains prohibited matter which was obviously present at the time of sale.

Many inquiries are directed towards seeking the assistance of the Department in order to obtain compensation for crop failures.

The question of compensation—being outside the ambit of the Seeds Act—is a matter between buyer and seller; when action on these lines is contemplated it is advisable for the injured party to consult his solicitor before whom all the relevant facts—including any certificates as to the quality of the material concerned—should be placed so that he will be in a position to advise as to what steps may be taken.

Some of the complaints were fully justified; the necessary action was then taken which, in most cases, resulted in a satisfactory agreement being reached without resorting to legal action. In some cases refund of the money paid by the purchaser was made.

SEED OATS.

It is evident that a considerable number of farmers have been very dissatisfied with the germination of their seed oats sown early in the year. These failures occurred during the month of February, one of our notoriously hot humid months.

The samples of oats received, about which the buyers had complained, when tested at the proper temperature were found to germinate well. As an indication of the effects of temperature on germination the following typical specimen is of interest.

A sample of oats took five days at 4 deg. C. (39 deg. F.) to germinate 96 per cent., four days at 20 deg. C. (68 deg. F.) to reach 94 per cent., and after fourteen days at 32 deg. C. (89½ deg. F.) germinated only 28 per cent., the remainder of the seed having rotted.

When subjected to an alternating temperature of 20 deg. C. for sixteen hours and 32 deg. C. for eight hours the germination results were 97 per cent. in four days, while an alternating temperature of 20 deg. to 37 deg. C. increased the time taken to seven days to obtain 96 per cent. The low results obtained at a continuous temperature of 32 deg. C.—which is a close approach to the humid conditions prevailing during February—is a definite indication to at least avoid sowing oats that lack maturation—i.e., those from a recent harvest—at this period of the year.

DODDER IN LUCERNE.

Unfortunately it is necessary to again emphasize that Queensland grown lucerne seed is not above suspicion with respect to Dodder content, and that the available cleaning machinery will not remove the seeds of this very objectionable plant. In this respect mention should be made of the effective eradication in the Gayndah area of the Dodder plants in a lucerne patch by the use of a flame thrower.

FEES.

The revised scale of fees for testing seeds has now been operating for two years. During the year under review thirteen seed vendors availed themselves of the service, those forwarding more than sixty samples during the twelve months being as follows:—

Name and Address.	No. of Samples Tested.
Addis Bros. Pty. Ltd., Brisbane	488
Committee of Direction of Fruit Marketing, Brisbane	289
State Produce Agency, Brisbane	133
The Burnett and South Burnett Primary Producers, Kingaroy	176
J. Jackson and Co. (Produce and Seeds) Pty. Ltd., Brisbane	67
The Queensland Peanut Board, Kingaroy ..	60

Any vendor of seeds who is truly interested in selling goods of high quality will use every endeavour to ensure that his seeds have the following good qualities:—

1. Trueness to name.
2. Freedom from weed seeds, other crop seeds, and inert matter.
3. High germination.

The first point is dependent upon obtaining stocks from reliable sources.

Efficient cleaning machinery can help in maintaining the second; and lastly the germination capacity should be ascertained on receipt of the goods and again when the seed has been in stock for any length of time—this period varies, of course, with different seeds.

Oil-bearing seeds, such as carrot, parsley, and parsnip—in particular the latter—deteriorate rapidly.

It is pleasing to note the efforts made by a few of the seedsmen to maintain the quality of their seeds by having them tested for germination on receipt and after storage.

Nevertheless, instances have occurred in which it has been necessary to warn offenders that, unless steps are taken to ensure that their stocks are kept up to the prescribed standards, it will be necessary to take legal proceedings, as no excuse can be accepted for selling seeds that are below the prescribed standards.

Many samples of seeds recently examined, and found not to comply with the prescribed standards, represented goods imported from overseas about three months or so previously; at that time they were found to be just up to the minimum requirement of the Seeds Act.

Seeds when submitted to the hot humid conditions prevalent in this State rapidly deteriorate; in particular is this aggravated by the system of storage used by many of the seed vendors, which does not permit of a free circulation of air at all times. The introduction of moisture by means of a water can used in watering plants is an obvious cause of trouble.

In storage of seeds it must be remembered that seeds breathe; they are dormant, but not dead; therefore they must have suitable conditions.

These include freedom from insects, damp, humidity, and moisture in the seeds, all of which cause rapid deterioration. When stacks of bags are made—which should not be too high—precautions should be taken to allow for free circulation of air. Bags should always be raised off the floor on battens, and must not touch the walls or roof.

During fine weather all windows, doors, &c., should be opened. It cannot be too often stressed that good storage is clean, dry, cool, airy quarters well protected against weather, insects, vermin, &c.

Unless the moisture content is low, storage in air-tight or closed containers is doomed to failure; the practice of keeping seeds in screw-top jars, ground-glass stoppered bottles, tight-lidded tins, &c., is thus seen to have attendant risks.

WEED SEEDS FOUND IN COMMERCIAL SAMPLES OF FARM SEEDS 1937-38.

Kind of Seed.	Amaranthus sp.	Apium sp.	Argemone mexicana.	Bidens pilosa.	Boerhaavia diffusa.	Brassica sp.	Centaurea melitensis.	Chenopodium ambrosioides.	Chenopodium sp.	Chrysanthemum leucanthemum.	Cnicus lanceolatus.	Cuscuta sp.	Datura sp.	Echium vulgare.	Erigeron sp.	GRASSES.																						Hibiscus trionum.	Hypochoeris sp.
																Aristida sp.	Avena fatua.	Axonopus compressus.	Bromus maximus.	Bromus mollis.	Chloris distichophylla.	Chloris inflata.	Chloris pectinata.	Chloris virgata.	Dichanthium sp.	Digitaria sanguinalis.	Eleusine sp.	Eragrostis sp.	Eriochloa sp.	Lolium temulentum.	Panicum decompositum.	Panicum sp.	Paspalum jubiflorum.	Rhynchelytrum repens.	Setaria glauca.	Setaria sp.	Tragus racemosus.		
Clover (Red)	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Clover (White)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cowpea	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	2	..	..	2	..	..	..	..	..	2	..
Grasses—																																							
Canary	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..
Paspalum dilatatum	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9	..	..	..	..	..	..	7	8	1	2	..	..	1	1	..	1	..	1	..	..	..
Prairie	1	..	..	..	..	..	..	..	2	..	..	..	..	..	2	..	8	..	..	..	..	..	..	..	..	..	..	1	..	2	..	2	..	..	..	..	2	6	..
Rhodes	5	2	..	..	2	..	..	4	10	..	..	..	..	..	3	5	..	..	..	..	2	2	40	6	19	7	4	5	8	..	3	3	..	18	..	7	..	1	..
Couch	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Phalaris tuberosa	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cocksfoot	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rye	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Lucerne	3	..	..	..	7	..	1	..	30	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	6	..	5	2	..	7	25	..	..	1	2	..	2	..
Millets—																																							
Setaria italica (Panicum)	10	2	2	..	1	..	..	..	2	..	..	..	3	..	..	2	1	..	..	..	..	..	..	..	..	2	..	..	1	..	1	3	..	..	19	1	..	7	..
Japanese	4	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	6	..	1	3	..	2	1	..	..	1	..	..	7	..
White Panicum	12	..	..	..	1	..	..	..	19	..	..	..	1	..	..	..	..	2	..	..	..	..	..	..	..	45	4	2	3	..	..	3	..	..	4	..	..	6	..
French	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	2	..
Barley (Cape)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	1	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..
Barley (Skinless)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Oats	..	..	..	..	..	1	..	..	6	1	..	..	..	1	..	..	47	..	9	3	..	..	..	..	..	..	..	..	..	37	..	1	..	..	3	..	..	..	1
Rye	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wheat	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sorghum	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sudan Grass	13	..	..	..	..	..	..	..	4	..	..	..	21	..	..	..	1	..	..	..	..	..	1	..	..	6	..	7	5	..	6	21	1	..	2	1	2	33	..

Kind of Seed.	Ipomaea sp.	Lepidium ruderale.	Lithospermum arvense.	Malva parviflora.	Malvastrum spicatum.	Malvastrum tricuspidatum.	Marrubium vulgare.	Medicago denticulata.	Melilotus indica.	Papaver sp.	Plantago lanceolata.	Polygonum aviculare.	Polygonum convolvulus.	Raphistrum rugosum.	Raphanus Raphanistrum.	Rhagodia sp.	Rumex acetosella.	Rumex sp.	Salsola Kali.	Salvia reflexa.	Solanum sp.	Sonchus sp.	Sorghum halepense.	Spergula arvensis.	Stachys arvensis.	Sida rhombifolia.	Sida spinosa.	Sida subspicata.	Siegesbeckia orientalis.	Silene gallica.	Silybum Marianum.	Sisymbrium orientale.	Tetragonia expansa.	Tribulus terrestris.	Trifolium minus.	Verbena sp.	Vicia sp.	Xanthium spinosum.	No. of Samples Examined.
Clover (Red)	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	10
Clover (White)	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	7	..	..	..	..	..	1	..	..	..	..	..	1	1	..	..	..	1	..	..	..	16
Cowpea	31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	1	5	..	..	..	2	223
Grasses—																																							
Canary	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6
Paspalum dilatatum	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	..	..	65
Prairie	..	2	3	8	..	..	..	2	9	..	..	9	8	..	..	..	..	1	2	..	..	3	..	..	4	..	..	..	..	..	..	..	..	4	..	..	..	..	35
Rhodes	..	2	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	3	..	..	..	..	..	..	3	..	7	2	..	..	..	..	..	..	4	..	..	213
Couch	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	11
Phalaris tuberosa	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
Cocksfoot	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8
Rye	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	42
Lucerne	..	2	..	2	..	..	3	..	..	..	5	19	..	..	..	4	..	11	..	2	..	..	..	..	..	3	..	..	..	..	..	..	..	1	..	2	..	..	90
Millets—																																							
Setaria italica (Panicum)	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	1	..	14	..	..	1	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	67
Japanese	..	..	..	..	2	2	..	..	..	..	..	..	3	..	..	..	..	7	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	2	..	..	..	..	44
White Panicum	2	..	..	..	9	6	..	..	..	..	..	11	..	..	..	..	..	..	..	..	11	..	..	..	2	16	1	..	..	..	..	..	..	..	..	..	..	..	61
French	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5
Barley (Cape)	..	..	2	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	13
Barley (Skinless)	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	15
Oats	..	..	4	4	..	..	..	..	2	2	1	2	10	..	1	..	4	4	..	..	..	1	..	..	..	..	..	..	..	1	..	6	..	..	..	..	3	1	152
Rye	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6
Wheat	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	13
Sorghum	3																																						158

WEED SEEDS.

The table relating to the weed seeds found in samples of farm seeds examined at the Seed Testing Station will be found of interest. Upon comparison with that published last year it will be observed that ten kinds of weed seeds shown in the 1937 table do not occur for the current year, while seventeen kinds shown in this year's table did not occur in samples analysed last year.

The following prohibited seeds were found during the current year—suitable action, of course, being taken with respect to the crop seeds containing them:—

Chrysanthemum leucanthemum.
Cuscuta sp.
Datura sp.
Sorghum halepense.
Xanthium spinosum.

The following is worthy of note in relation to those crop seeds found to be infested with the weed seeds to a large extent.

Paspalum dilatatum.—The majority of weed seeds present were those of grasses. In nine instances was the presence of *Axonopus compressus* (Carpet grass) detected.

Prairie Grass.—Here a much wider range of weed seeds was found, the most noteworthy being *Avena fatua* (Wild Oats), *Hibiscus trionum, Malva parviflora, Polygonum aviculare,* and *Polygonum convolvulus.*

Rhodes Grass.—*Amaranthus, Chenopodium* and two species of *Sida* are very prevalent, the bulk of the remainder being those of grasses.

Lucerne Seed.—Here again the major quantity is grass seeds; *Chenopodium, Rumex,* and *Polygonum aviculare* are also rather prevalent. Unfortunately, *Cuscuta* sp. (Dodder) appears on the list (last year none was found); it may be noted that it was in Queensland-grown seed.

The Millets.—*Amaranthus, Chenopodium, Sida, Salsola, Polygonum, Malva,* and *Malvastrum,* with a very plentiful supply of grass seeds, were found. The prohibited poisonous seeds of Datura were found in five samples out of a total of 177 samples examined.

Oats.—*Chenopodium, Polygonum, Aristida,* and *Lolium temulentum* are very prominent.

Sudan Grass.—This is a very weedy proposition indeed, with twenty-one instances of Datura —a prohibited poisonous weed seed. *Amaranthus, Polygonum, Hibiscus trionum,* with a few grass seeds also were found.

Reviewing the incidence of weed seeds as a whole one has, unfortunately, to record that both seller and buyer are not exercising the degree of care that should be used where weeds are concerned.

Whenever the presence of Datura or Dodder is detected immediate steps are taken to seize the bulks of such seeds, which means a loss to both the grower and vendor, both of whom can help to eliminate these objectionable and deleterious weeds. As this table indicates, the presence of weed seeds is a problem which can only be solved by clean farming and the intelligent use of cleaning machinery.

To obtain an illustration of how little or how inefficiently cleaning machinery is used in Queensland, it is only necessary to refer to the table and note that a small seed like *Amaranthus* appears in no less than thirteen Sudan grass seed samples examined. Under the circumstances there is no alternative but for drastic action to be taken by the seed inspectors.

SEEDS ACT OF 1937.

During the year under review the legislation relating to the control of the sale of seeds for sowing was revised by repealing "*The Pure Seeds Acts of* 1913-14" and passing in its place "*The Seeds Act of* 1937."

The objective of those interested in the supervision and control of the sale of seeds for sowing in Australia has been to obtain uniformity of standards. For this purpose two conferences of Seed Testing Officers were held in Melbourne and Adelaide respectively; as a result rules for uniform methods of analysis and tentative standards were considered; these have advanced a considerable way towards finality, but there are as yet a number of problems to be overcome.

At the Adelaide Conference it was resolved that when Seeds Acts or Regulations are amended they be worded to provide for "Pure Germinating Seed"—to be made eventually the single standard, instead of purity and germination separately.

Pure germinating seed is obtained by multiplying the percentage of pure seed by the percentage of germinable seed and dividing by 100. It may be considered as the actual *amount of viable seed present* in a sample.

Provision has therefore been made in the new Queensland Act and Regulations for pure germinating seed, but it is considered that when this is put into operation a restriction should be placed on the percentage by weight of stones, dirt, and such-like material extraneous to the seeds in question; otherwise a sample of "high germinating" seed may be deliberately adulterated with soil, &c., and still conform to the pure germinating seed standard—as high germination compensates for low purity and *vice versa.* The maximum amounts by weight suggested by Queensland for this "extraneous matter" are—

1 per cent. in vegetable seeds;
3 per cent. in agricultural seeds generally;
6 per cent. in Rhodes grass.

The principal amendments of the Act were necessary to obtain an Act that would permit of uniformity of standards with the other Australian States, and to provide for labelling of all seeds for sowing.

The labelling section requires all seeds at a date to be determined to be labelled with certain particulars, such as—name and address of seller; kind and variety of seed; and net weight when packed—excepting packet seeds, which are already labelled. This is to be brought into operation gradually, starting with vegetable seeds, with farm seeds to follow later.

Another main principle and reason for amendment of the Act was the seizure section. Under the new Act, if the provisions of the Act have not been complied with within ninety days of seizure, the seeds automatically become forfeited to the Crown, and may be disposed of as the Minister directs.

Seeds may be removed and treated under the supervision of an inspector, or, if treatment is not feasible, the seeds may be destroyed. These provisions save a lot of unnecessary delay and formal procedure.

Of course, if a vendor of seeds so desires, the legal procedure of prosecution and forfeiture by order of the Court can still be carried out.

One amendment was effected to remove an irksome and unworkable section in relation to the compulsory giving of invoices with a guarantee, and at the same time provide a common basis of sale of seeds for sowing.

The standards—with some exceptions—laid down by the Regulations are based primarily on the uniform standards agreed upon at the Seed Testing Conferences mentioned above.

They provide for totally prohibiting certain seeds (Schedule I.), limiting weed seeds by count in specified cases (Schedule II.) and limiting inert matter, weed seeds, and other seeds by weight (Schedule III.), which also includes minimum germination percentages.

French Beans.

During the year under review there has been an increasing quantity of Queensland-grown French bean seed upon the market. Unfortunately, the growers fail to realise that they must clean and hand pick the seeds before offering same for sale. The buyer of French beans for planting is used to obtaining supplies free from impurities, and cannot be expected to pay as high a price for uncleaned seed as is asked for beans free from extraneous matter.

The saving of beans for seed from crops which it is decided are not suitable for sending to market cannot be too strongly condemned. Beans intended for seed should be sown from selected seed, and a very careful and frequent rogueing of the growing crop be undertaken.

No one with any practical knowledge would breed cattle, sheep, or horses from unknown stock; yet so many will persist in practising this uneconomical process with plants, with consequent deterioration of the strains.

Commerce (Trade Descriptions) Act of 1905.

Seeds for Sowing.

The following table sets out particulars relative to seeds from overseas, submitted by the Chief Quarantine Officer, Plants to this Branch for examination during the year 1937-38:—

Kind of Seed.	Imported from.	No. of Samples Examined	Approximate Quantity of Seed Imported.
Beans—			
Broad	New Zealand	4	596 lb.
French	New Zealand, Holland, U.S.A., Germany	58	46 bags
Lima	New Zealand, U.S.A.	5	400 lb.
Mauritius	Fiji, Papua	17	838 bags
Beet	New Zealand, Holland, England, Denmark, France, U.S.A., Germany	98	2,557 lb.
Beet Sugar	Holland	4	448 lb.
Cabbage	New Zealand, Holland, U.S.A., England, Germany, France, Denmark	112	938 lb.
Carrot	New Zealand, U.S.A., Denmark, England, Holland, France, Germany	104	2,296 lb.
Cauliflower	Holland, New Zealand, Denmark, Germany, France	37	134 lb.
Celery	England, U.S.A.	3	4 lb.
Cucumber	New Zealand, U.S.A., England, France, Holland	64	794 lb.
Cowpeas	Papua	6	224 bags
Clover-			
Red	New Zealand	11	33 bags
White	England, New Zealand	6	5½ bags
Cress	New Zealand, Holland	2	5 lb.
Endive	Holland, France	2	5 lb.
Grasses			
Agrostis sp.	New Zealand	2	9 bags
Cocksfoot	New Zealand	2	18 bags
Festuca sp.	New Zealand	1	1 bag
Poa sp.	New Zealand	1	3 bags
Rye	New Zealand	67	277 bags
Kale	Denmark	1	5 lb.
Kohl-rabi	New Zealand, England, Holland, Denmark, U.S.A.	9	19 lb.
Leek	England, Holland, New Zealand, Germany	8	9 lb.
Lettuce	New Zealand, Holland, England, U.S.A., France, Germany, Denmark	91	331 lb.
Mangel	England, Holland, Denmark, New Zealand, France	89	9,072 lb.
Marrow	New Zealand, U.S.A., Holland, England, France	47	603 lb.
Marjoram	France	1	4 oz.
Melon—			
Rock	U.S.A., New Zealand	28	107 lb.
Water	U.S.A., New Zealand	55	411 lb.
Mustard	New Zealand, Holland, England, U.S.A.	6	94 lb.
Onion	New Zealand, England, U.S.A., Holland	13	50 lb.
Parsnip	New Zealand, England, U.S.A., Denmark, Holland	16	134 lb.
Parsley	England, New Zealand, Germany, Holland, Denmark	6	23 lb.
Peas (Garden)	New Zealand	698	762 bags
Pumpkin	New Zealand, U.S.A., France	10	50 lb.
Radish	Denmark, England, New Zealand, France, Holland, Japan, U.S.A.	62	388 lb.
Rape	Holland, New Zealand, England	56	5,600 lb.
Rhubarb	New Zealand, Holland, France	3	7 lb.
Sage	France, U.S.A.	2	2 lb.
Spinach	New Zealand, Holland, U.S.A., Denmark	10	43 lb.
Sweet Corn	U.S.A.	13	45 lb.
Swede	Holland, New Zealand, England, U.S.A., Germany, Denmark	38	2,756 lb.
Tomato	U.S.A., New Zealand, England, Japan, Holland, France	106	308 lb.
Turnip	New Zealand, Holland, Denmark, England, France, Germany	31	229 lb.
	Total Number of Samples	2,005	

Parcels containing seeds received from Parcel Post for Examination, 275.

The seeds mentioned in the above table were examined for purity (analytical) and germination, with the result that it was found necessary to stop the entry of the following seeds for the reasons set out:—

Lots.	Quantity.	Kind of Seed.	Reasons for Action.	Action Taken.	Country Received from.
1	6 lb.	Pumpkin	Faulty germination	Detained	New Zealand
1	2 lb.	Tomato	Faulty germination	Destroyed	U.S.A.
1	2 lb.	Tomato	Faulty germination	Detained	Holland
1	160 bags	Mauritius Beans	Faulty germination	Detained	..
1	5 lb.	Cucumber	Faulty germination	Detained	Holland
2	2 lb.	Lettuce	Faulty germination	Destroyed	Holland
1	7 lb.	Marrow	Faulty germination	Destroyed	Holland
1	1 lb.	Celery	Faulty germination	Destroyed	England

FERTILIZERS ACT, 1937-1938.

The following table sets out particulars relative to the operation of the Act for the year ending June, 1938:—

Licenses—	
Issued	210
Registrations—	
Effected—General	310
Effected—Special Mixtures	163
Samples received from—	
Dealers	46
Buyers	13
Inspectors	167
Government Departments	4

The year's operations, as enumerated above, when compared with the table published last year, show an increase of thirteen licenses issued.

The number of fertilizers registered shows an increase of ninety-four general and an increase of thirteen special mixtures.

The number of dealers' samples is the same as last year; while buyers have forwarded nine more samples.

Samples taken by inspectors have increased by one.

A survey of the analyses carried out on these samples indicates that the supply of fertilizer now being offered for sale in this State can be purchased with confidence.

FERTILIZERS SOLD IN QUEENSLAND.

A review of the fertilizers registered under the Act for the current year reveals the high standard of materials sold in this State.

The following sets out the kinds of materials sold and the respective percentages of nitrogen (N) phosphoric acid (P_2O_5) and potash (K_2O) present in such materials:—

Fertilizer.	MINIMUM—		
	Nitrogen %	Phosphoric Acid. %	Potash. %
Nitrate of soda	15·6	..	..
Sulphate of ammonia	20·6-21	..	..
Dried blood	11-13	..	..
Superphosphate	..	20·5-21 (Water sol.)	..
Bone dust	3-3·5	22-23·5	..
Meatworks fertilizer	3-6	14-23	..
Basic phosphate	..	17 (cit. sol.)	..
Nauru phosphate	..	37	..
Sulphate of potash	..	..	48-50
Muriate of potash	..	..	50-52

A large proportion of the fertilizer distributed in Queensland is sold in the form of mechanical mixtures, i.e., mixtures containing two or more of the abovementioned ingredients, with the exception of basic phosphate and Nauru phosphate, with in some cases the addition of vegetable meals, magnesium limestone, or pulverised limestone in varying quantities.

GRADE FORMULÆ.

The lowest grade mechanical mixture registered in Queensland this year contains total active constituents—nitrogen and phosphoric acid—amounting to 19·5 per cent.

The total active constituents of the lowest complete mechanical mixture containing nitrogen, phosphoric acid, and potash amounted to 20 per cent.

There are also being offered for sale materials that are claimed to serve a dual purpose, i.e., fertilizer and insecticide; these contain a minimum of 7·1 per cent. nitrogen, phosphoric acid, and potash.

From the table shown above it will be noted that a fertilizer may consist of 100 per cent. fertilizer and yet have active constituents amounting to 11 per cent. only—for instance, dried blood. Nitrate of soda contains 15·6 per cent. only of active constituent (nitrogen). Consequently, it should be realised that mixtures containing these ingredients cannot have a high grade formula. The words "low grade" are not applicable to the case.

In the past, low grade formulæ were due to the presence of material, other than fertilizer, in the mixture.

FILLER.

The regulations relating to filler are now in full operation, with the result that such materials as earth, ashes, sawdust, antbed, &c., are not used in any fertilizer registered for the current year.

The fact that it is now provided that the kind and percentages of any of the above material used in any fertilizer must be declared on the label has been sufficient to entirely suppress the practice.

STORAGE OF FERTILIZER.

Certain buyers asked for check analyses to be carried out on fertilizer purchased.

On investigation, the fertilizer in question was found to be in an excessively wet condition—due to storage in sheds that permitted entrance of rain.

It should be realised that the storage of fertilizer is a matter of considerable importance. Although the mechanical condition of fertilizer mixtures when placed on the market in Queensland is quite above reproach, certain mixtures tend to set under damp conditions. Under excessively damp conditions there is even a possibility of leaching of soluble ingredients. It is also well known that moisture tends to induce chemical reactions in certain mixtures, causing losses of water soluble ingredients.

Consequently, it is obvious that dry airy storage should be provided by not only the seller but also the purchaser.

The moisture content of fertilizers sold in this State ranges as follows:—

	Per-cent. Moisture.
Sulphate of ammonia	under 1
Superphosphate	5-6
Bone dust	8-10
Meatworks fertilizer	4-10
Sulphate of potash	1-2
Muriate of potash	1-2

In the case of mixed fertilizers, it has been found to vary from 2 per cent. to 6 per cent. in South Queensland, and up to 9 per cent. in the northern areas.

Storage of fertilizer under conditions that permit of water dripping on to the bags naturally adds to the moisture content, and increases the weight of the bag. This, in its turn, decreases the percentage of active constituents—nitrogen, phosphoric acid, and potash—present but does not reduce the weight of such active constituents present in the container unless water is in excess, when any drainage would be a loss as mentioned above.

Consequently, although the fertilizer may, when dry, have complied with the guarantee on the label, it would, when wet, be found on analysis to be below guarantee.

In instances such as this where the fault is obviously the purchaser's it is customary to issue the report with the percentages of active constituents—nitrogen, phosphoric acid, and potash—found, calculated to a "normal" moisture content.

LABELS.

The labelling of fertilizers may now be considered as satisfactory. Certain instances have occurred, however, where fertilizer has been offered for sale without labels being attached to the bags. Drastic action had to be taken by this Branch. No excuse can be accepted for failure to attach labels setting out the name of the fertilizer, the guaranteed analysis, the net weight, and the name of the manufacturer or dealer—all matters of great importance to the farmer; in fact, the absence of the label reduces the value to the farmer practically to nil, especially with mixed fertilizers.

SEIZURE.

In cases such as those referred to, it has been necessary to exercise the power given under section 17 (1) (*c*) of the Fertilisers Act and seize fertilizer that does not comply with the provisions of the Act, or that is being offered for sale by any person who has not complied with the provisions of the Act.

During the year concerned twenty-three bags of mixed fertilizer were seized and sealed under this section, as the necessary labels were not attached.

SPECIAL MIXTURES.

Although there is a large variety of fertilizer mixtures on the Queensland market, this variety still does not satisfy a number of agriculturists who require mixtures made to their own specifications.

In such cases it is unreasonable to expect wholly printed labels to be used on the bags, as lots ordered are often very small—possibly ½ ton or even smaller.

Skeleton labels are used by dealers supplying these special mixtures; these skeleton labels have all probable requirements printed thereon, leaving blanks for actual percentages to be inserted—by ink or typewriter.

A considerable amount of policing is necessary to ensure that all special mixtures sold are properly labelled and registered with this Department.

It would save this Department and dealers concerned quite a considerable amount of work if these fertilizers could be eliminated from the market; unfortunately, however, there seems to be quite a big business done in this line, although in a number of cases the variation from standard registered mixtures is almost negligible.

VETERINARY MEDICINES ACT, 1937-1938.

The following table sets out particulars relative to the operation of the Act for the year ending June, 1938:—

Licenses—	
Issued	379
Registrations—	
Effected	531
Samples received from—	
Dealers	128
Buyers	2
Inspectors	1
Government Departments ..	1
Board Meetings	10

The year's operations as enumerated above when compared with the table published last year show a decrease of 13 licenses issued and a decrease of 39 registrations effected.

With the co-operation of the Stock and Dairy Inspectors it has been possible to carry out inspection work most extensively, involving the visiting of nearly every seller of veterinary medicines in the State.

COMPLAINTS.

In only one case was a complaint received from a buyer; after investigation of the circumstances and analysis by the Agricultural Chemist of the sample of veterinary medicine concerned it was ascertained that the preparation was not at fault.

UNREGISTERED VETERINARY MEDICINES.

As the Act has now been in operation for some years, it has been considered timely to enforce to the full extent compliance with the registration provisions.

Consequently all dealers offering unregistered preparations for sale have been notified that such action would render them liable to prosecution.

The following table sets out a list of preparations withdrawn from sale:—

PREPARATIONS WITHDRAWN FROM SALE.

Packages.	Kind of Veterinary Medicine.	Reason for Action.	Action Taken.
12	Dog Medicines	Unregistered	Destroyed
6	Drenches	Unregistered	Destroyed
50	Various	Unregistered	Destroyed

In addition to the above, two brands of drenches have been withdrawn from sale, as the manufacturers do not desire to comply with the registration section of the Act.

CONFIDENTIAL FORMULÆ FROM OVERSEAS.

Quite a number of the veterinary preparations offered for sale in Queensland are manufactured overseas.

As it would be unfair to enforce the disclosure of the formulæ used by the manufacturers to their Queensland representatives, the submission of formulæ—marked confidential—direct to the Secretary, Veterinary Medicines Board, has been accepted, provided that a further linking-up declaration is received from the representative.

Naturally, the completion of registration of materials under these circumstances often involves considerable correspondence and dealings with a number of parties, and obviously takes considerable time to finalise.

However, taking these matters into consideration, the position with respect to registration of overseas veterinary medicines is most satisfactory—no manufacturer having actually refused to register in Queensland, and only a small number having allowed their stocks to be sold out, owing to their small sales in Queensland not warranting the payment of the annual fees concerned.

The registration of preparations produced by one of the largest companies of its kind in the world has recently been finalised, involving over thirty veterinary medicines.

ALTERED LABELS.

In certain cases it was found that the wording of labels used on veterinary medicines had been altered from that submitted to and accepted by the Veterinary Medicines Board. Where this alteration was of consequence, action was taken to enforce the use of the original wording as accepted. Great care has been taken in demanding and checking not only one label for each veterinary medicine submitted for registration, but the labels for every sized package of such preparation on the Queensland market; only by such care can departure from accepted wording be checked.

PEST DESTROYERS ACT, 1937-1938.

The following table sets out particulars relative to the operations of the Act for the year:—

Registrations—	
Effected—General	410
Special Mixtures ..	30
Samples received from—	
Dealers	485
Buyers	4
Inspectors	33
Government Departments ..	7

The year's operations as enumerated above, when compared with the table published last year, show an increase of 22 registrations effected.

All of the samples received from buyers were found to comply with the standards prescribed.

ANALYSES OF SAMPLES.

By the usual arrangement with the Agricultural Chemist, quite a number of groups of pest destroyer samples were again analysed during the year. This includes the cattle dips, arsenates of lead, copper dusts, copper sulphates, and Bordeaux mixtures, sheep dips, nicotine sulphates, and lime sulphurs.

The quality of these materials analysed was generally very high; purchasers are able to safely work on the guarantees expressed on the labels—such guarantees being minima or maxima according to the circumstances.

INSPECTION.

During the last few years the number of inspections carried out has been slowly increasing. This extension of operations has been assisted by the development of a sampling apparatus enabling samples to be drawn from bulk or large drums with holes too small to permit of the entrance of any form of dipper. The apparatus works on the syphon principle, and even quite heavy liquids (S.G. say 1·8) can be sampled satisfactorily by it.

LIME SULPHUR.

The improved methods now in use for the manufacture of lime sulphur concentrate have resulted in a truly remarkable rise in the quality of this material, which at one time was an extremely variable article. In the past samples of lime sulphur have analysed as low as 11 per cent. polysulphide sulphur.

During 1934 the standard was fixed at 16 per cent. polysulphide sulphur. To-day analyses of two of the brands on the market disclose approximately 20 per cent. polysulphide sulphur. It may be mentioned that when the standard was raised to 16 per cent. certain dealers stated that it could not be attained.

EXPERIMENTS—LIME SULPHUR.

A continuance of the experiments carried out last year with respect to the keeping properties of lime sulphur has been carried out during the current year along slightly modified lines. Whereas in the previous tests carried out indications were that with comparatively low grade material, storage in the sun and in drums only partly full were two factors that apparently adversely affected the quality; with the present tests it seems that high grade lime sulphur is not appreciably affected by these conditions—at least, within a reasonable length of time.

The following progressive table shows analyses of samples taken over a period of seven months; it is of interest to note that the lowest finding in this series is 19·4 per cent. polysulphide sulphur.

Drum.	Storage Conditions.	Polysulphide Content.		
		—	2 Months.	7 Months.
A. Full	In open exposed to sun	19·4	19·4	19·4
B. Full	In a shed—i.e., in the shade..	20·2	20·0	19·6
C. One-third full ..	In open exposed to sun	20·5	20·3	20·0
D. One-third full ..	In a shed—i.e., in the shade..	21·1	21·0	20·5

It should be noted that this experiment is not yet concluded.

UNREGISTERED PREPARATIONS.

During the last few years the number of unregistered pest destroyers in this State has been reduced to almost nil.

During the last year, as a contrast to veterinary medicines, no sale of pest destroyers had to be stopped. This satisfactory position with pest destroyers is due largely to the extent of time over which dealers and others have been educated in the requirements of the Act; the Pest Destroyers Act came into force in 1923, whereas the Veterinary Medicines Act was put into operation early in 1934.

STOCK FOODS ACTS, 1937-1938.

The following table sets out particulars relative to the operations of the Acts for the year ending June, 1938:—

Registrations—	
Effected	294
Samples received from—	
Dealers	333
Buyers	—
Inspectors	23
Inspectors under the Commerce Act	70
Government Departments ..	9

The year's operations as enumerated above, when compared with the table published last year, show an increase of 60 registrations effected.

ANALYSES.

Quite a number of groups of stock foods were again analysed by the Agricultural Chemist. These included the bone meals, meat meals, meat and bone meals, Nauru phosphates, dicalcic phosphates, coconut, linseed, and cottonseed meals.

The findings generally were in accord with guarantees.

INSPECTION AND SAMPLING.

Attention was given to this aspect of the Act's administration; supervision of this type, however, is necessarily not as efficient as with fertilizers. This is due to a number of causes, one being that quite a number of mixed concentrates are not stored, but mixed and forwarded as ordered, and another being the difficulty in obtaining such truly representative samples of materials like stock licks, as is possible with fertilizers. Stock licks, for instance, contain materials of widely different natures—including molasses, meals, iron sulphate, and potassium iodide—which are naturally difficult to mix evenly. Samples taken, however, indicate care on the part of the producers.

BRAN AND POLLARD.

The question of fixing uniform standards throughout Australia for these materials is being considered by the Australian Council of Agriculture.

The standards in force in Queensland are satisfactory and have stood the test of years; no more than a slight alteration is considered necessary. The matter is in progress at the present time.

STOCK LICK INGREDIENTS.

As the majority of stock lick ingredients are themselves sold as stock foods—bone meal or flour, various meals, dicalcic phosphate, Nauru phosphate, &c.—supervision of the quality of these serves a dual purpose.

Analyses of commercial ingredients not in themselves stock foods are also carried out from time to time; this is necessary to check the "theoretical" amounts of active constituents obtained from these ingredients when used in licks.

LABELLING.

The Regulations require guarantees to be stated on labels, as minima or maxima. It is necessary to realise this to evaluate a lick or other stock food from a label.

For instance, a meal analysing 15 per cent. crude protein, 5 per cent. crude fat, 12 per cent. crude fibre, would have declared on the label 14 per cent. min. crude protein, 4½ per cent. min. crude fat, 13 per cent. max. crude fibre.

It is necessary for a dealer to adjust the actual findings to allow for variations in quality.

With a lick a guarantee of 53 per cent. max. salt would mean that 50 per cent. of salt is the theoretical amount present.

In preparing labels a fixed scale is used for making allowances—additions or deductions.

With licks it should also be realised that the percentages of phosphoric acid (P_2O_5), lime (CaO), magnesia (MgO), iron (Fe), and sulphur (S) are required to be stated on the label. This means the percentage of the active constituent must be declared, not the percentage of the ingredient containing that active constituent. For instance, a lick containing 5 per cent. iron sulphate would show 0·9 per cent. min. iron (Fe) on the label and 5 per cent. magnesium sulphate (Epsom salts) would show 0·7 per cent. min. magnesia (MgO). All iron-bearing ingredients would show the percentage of iron, and all magnesia-bearing ingredients would show the percentage of magnesia. This obviously gives a common basis for comparison of licks containing their iron and magnesia in different compounds.

Licks are required to be labelled with the maximum percentage of meals present; if this percentage exceeds 50 (more meal than lick), the protein, fat, and fibre is required to be stated, in addition, of course, to the "mineral" active constituents.

For convenience the iodine content is expressed as oz. of potassium iodide per ton—as quantities used are very small.

LISTS OF STOCK LICKS.

Following a number of requests for lists of registered stock licks and mineral feeds, a table was prepared for publication in the "Queensland Agricultural Journal"; extracts will be available at a later date.

STOCK FOODS IMPORTED FROM OVERSEAS.

The following table sets out the samples submitted for examination by the Chief Quarantine Officer, Plants, representing seeds imported from overseas for feeding purposes only during the year ending June, 1938:—

Kind.	From.	No. of Samples.	Quantity.
			Bags.
Canary	Argentine, England, Spain	7	381
Hemp	Japan, England	14	384
Linseed	England, New Zealand	4	83
Maw	Holland	1	10
Millet—			
Mixed	Japan	6	196
Red	Japan	3	70
White	Japan	1	..
Mixed Bird Seed	England	5	26
Rape	Japan, China, England, New Zealand	10	158
Teazle	England	2	1¼
Turnip	New Zealand	17	13
	Total	70	

The above consignments were examined, and with the exception of 122 bags of canary were found to comply with the requirements of the Stock Foods Acts. The canary seed from Argentine contained an excess of weed seeds, and was cleaned under supervision before being allowed to be used for consumption.

F. B. COLEMAN,
Officer in Charge.

REPORT OF THE AGRICULTURAL CHEMIST.

The samples received in the Chemical Division of the Department for analysis during the year ending June, 1938, are tabulated below.

——	1935–36.	1936–37.	1937–38.
Butters	446	489	679
Buttermilks	3	10	7
Bloods	125	..	..
Cheese	212	343	357
Digestibility trials (Stock Foods)	..	..	168
Dipping fluids	334	414	420
Fertilizers	123	188	205
Fruits, fresh	105	38	46
Fruits, canned, jams and preserves	13	18	19
Grasses, plants, seeds, &c...	166	85	87
Grasses, plants for hydrocyanic acid	14	35	13
Limestones, lime, &c. ..	29	49	42
Milks and other milk products	5	8	15
Nuts, Australian, Tung, &c.	11	..	..
Pest destroyers	105	165	376
Plants, for Poison Plants Committee	..	..	157
Salts and stock licks ..	13	8	14
Sawfly investigation specimens	..	17	4
Soils and subsoils	256	191	239
Soil moisture determinations	2,496	2,304	2,496
Soils licked by stock ..	6	3	..
Soils for nitrate, pH, carbon, and mechanical analysis..	2,175	1,760	2,461
Stock foods	46	123	95
Tobacco	17	..	..
Waters	184	420	135
Wheats	40	19	56
Viscera and toxicological specimens	309	269	241
Veterinary medicines ..	2	10	6
Samples for Arsenic in Wool Commission	35	..	..
Miscellaneous	43	60	79
Totals	7,313	7,006	8,417

GLASSWARE TESTED, &C.

——	Received.	Approved.	Condemned.	Broken.	Per cent. Condemned.
Burettes	27	26	1	..	3·70
Cream bottles ..	2,131	2,075	43	13	2·02
Milk bottles ..	601	561	38	2	6·32
Pipettes	948	796	123	29	12·97
Thermometers ..	738	530	200	8	27·10
Totals ..	4,445	3,988	405	52	9·11

For the testing of cattle-dipping fluids, 204⅕ pints of standard iodine solution were prepared and 440 pints of N/10 alkali for testing milk acidity.

From the tabulated list of analyses made, it will be seen that a much larger number were made this year than last year—namely, over 1,400 more—whilst the amount of glassware tested was only half of that done last year.

STAFF.

Since March, Mr. Bick and Mr. Robinson have been away full time from the laboratory attending the University. Mr. Vallance and Mr. Wood have been engaged entirely upon pineapple soil survey work, whilst Mr. Harvey and Mr. Mathams have been engaged with work connected with the digestibility of different stock foods. The large amount of analytical work detailed herein has only been accomplished by the loyal and efficient work of the entire staff.

VISCERA AND TOXICOLOGICAL SPECIMENS.

Under this heading 241 samples were forwarded for analysis, of which 176 were samples of viscera and ingesta, and 65 were various miscellaneous toxicological samples such as plants, earth, baits, &c.

Of the 176 samples of viscera and ingesta, 69 contained arsenic and one contained saponin—i.e., 39·8 per cent. of the samples contained arsenic—which percentage, by the way, is practically the same as that which occurred in similar samples last year.

Of the 65 miscellaneous samples, 15 contained arsenic and 6 contained hydrocyanic acid—i.e., 23·1 per cent. of these samples contained arsenic.

As mentioned in previous reports, this indicates that quite a high percentage of animal deaths occurs through not preventing stock from having access to any of the various forms of arsenical compounds used on the homestead.

CUSTOMS SAMPLES.

From the Commonwealth Dairy Produce Inspection Branch and the Meat and Fruit Exporting Branch 1,049 samples were received, of which 609 were butters for export and 64 butters competing for the Orient prize. The samples in connection with the Orient prize were collected by the courtesy of the Federal officers, but no charge was made for these samples. There were 314 samples of cheese for export and 16 samples of imported cheese. Other samples comprised buttermilk 7, meats and meat products 7, preserved fruits, jams, chutneys, &c., 18.

SOILS.

The chemical analyses of soil samples submitted are given in Table I., and the mechanical analyses and physical properties in Table II.

A large number of soils forwarded by farmers have not received full chemical analysis, but have only been examined for acidity and physical soil conditions, and in connection with these samples, when possible, extension officers of the Department have visited the properties and reported upon conditions existing, and with these reports in conjunction with the soil examination mentioned, it has been possible to advise and give the information desired. Notwithstanding this fact, soil analysis work has been very extensive during the year, as 310 samples were received of which 234 were analysed, leaving 67 samples on hand to be analysed.

In connection with the suggested irrigation of some Selheim scrub soils, Mr. Foran, a member of this staff, proceeded to Selheim and made a brief soil survey of the area. He obtained 13 soil samples which were analysed, and a report of this investigation has been forwarded to the Irrigation and Water Supply Branch of the Lands Department.

As mentioned in my last report, a soil survey of the Beerburrum, Glass House Mountains, and Beerwah area under pineapples had been started. This survey has been completed and fully reported in the "Queensland Agricultural Journal, June, 1938. This work entailed the analysis of over 100 soil samples.

The soil survey work has now been extended to the Nambour, Woombye, Palmwoods pineapple districts. The field work has been completed and approximately 200 samples of soils and subsoils have been collected for analysis. A certain amount of work has been completed on these samples, and further work is now being conducted on them. In addition, ten samples of soil have been analysed in connection with the proposed pineapple demonstration plots in the Mackay, Innisfail, and Rockhampton districts.

Besides the large number of soils forwarded by Mr. Wells, Director of Cotton Culture, in his investigation of soil matters in regard to the effect of grass rotation upon the composition of cotton soils, Mr. Wells has also forwarded a large number of soil profiles of different soil types for analysis. Various research officers of the Department have forwarded soils for both complete analysis and brief examination in connection with some of the problems they are dealing with, and a large number of soils have been received from Mr. Mandelson from tobacco seedling plots in various districts for the determination of nitrogen and the carbon-nitrogen ratio for the purpose of ascertaining the effect of different treatments of these seed-beds, such samples having been taken at different periods during the year. As will be seen in the tabulated list, the number of such soil samples received from various officers and others, for nitrate, PH and carbon determination, was 2,461.

GRASSES, SHRUBS, &c.

The number of grasses and plants forwarded for analysis for the purpose of ascertaining their food value for stock was the same as the number received last year. These analyses are detailed in Table III.

For the purpose of reporting analyses of grasses, &c., owing to the fact that it was impossible to obtain samples of grasses, &c., from long distances with their full moisture content, scientists have decided upon the practice of reporting upon a moisture free basis and this has been done in Table III.

Thus in this table the analysis of pineapple silage made from pineapple waste (No. 6344) shows 6·33 per cent. protein on a water free basis, whereas the original moist sample of this ensilage was found to contain only about 1 per cent. protein, and as it is in the moist condition that it is fed, the 1 per cent. protein and not the 6 per cent. protein has to be considered when compounding any ration for stock, but, upon the other hand, the fact that this material and similar materials are of a moist succulent nature make them valuable supplements in stock rations. The leguminous crops such as lucerne, vetches, cowpea, peanut vine, &c., owing to their high protein content, have distinct value as fodder for stock, and analyses of peanut vine and *stylosanthes* sp. are given in Table III.

Regrading *Stylosanthes*, the first sample was received by this Department in 1914, and was grown on the Townsville Reserve. It was found to contain 17·7 per cent. protein on the water-free material. Since then a number of samples have been received with protein content ranging from 12 to 14 per cent., and also one sample of seed of this plant was received and found to contain 31·9 per cent. protein on water-free material.

It may be stated that a commencement has been made in analysing some pastures engaging the attention of those interested in the fattening of beef cattle in the tropical coastal belt, and a few examples of these analyses are given in Table V.

Preliminary work on Mitchell grass pastures was begun, but, owing to unfavourable seasonal conditions, further suitable supplies have been unobtainable; however, the work is being continued. Examples of Mitchell grass analyses are given in Table V.

SORGHUM SEEDS.

The value of cultivating sorghum seed varieties in districts unsuitable for maize has been suggested by officers of the Department of Agriculture and Stock, and for this reason a number of samples of sorghum seed have been forwarded by officers for analysis.

Last year sixteen samples of sorghum seed were received from Roma, and these samples had a protein content ranging from 5·4 to 9·2 per cent., with an average content of 5·91 per cent. This year, samples grown at Biloela and Toowoomba were received, and analyses of these samples are given in Table VI.

Attention is drawn to the very great difference in protein content of these samples, ranging from 10·6 to 14·6 per cent., compared with the protein content of last year's samples from Roma. What effect the factors of climatic and soil conditions has had upon the protein content of these different samples cannot be stated, but it is considered that investigation as to the effect of such factors would be of value. Such wide variation of the different samples requires definite consideration when such samples are intended for inclusion in poultry rations. It may be of interest to note that the seed from the Dwarf Pink variety had the second highest protein content in the samples from Roma, namely 7·7 per cent., and Dwarf Pink has the highest protein content of the Toowoomba samples, namely 14·6 per cent.; but whether the Dwarf Pink variety has an inherent relatively higher protein quality cannot be judged on the protein content of two samples only.

DIGESTIBILITY OF STOCK FOODS.

Two of the staff have been actively occupied under the guidance of Dr. White in determining the digestibility of the various food groups in certain Queensland pasture plants and concentrates.

After preliminary examination of the available methods the system of differences between intake and output—using sheep—was adopted.

This involves a large number of analytical determinations, so far 168, and the number has been augmented by planning the work so as to obtain figures which lend themselves to statistical resolution.

Seasonal disturbances have made some of the work sporadic, but in certain foods complete sets of figures have been obtained. However, work is necessary before it is possible to publish definite results.

POISONOUS PLANTS.

In connection with poisonous plants, the Minister has called together a Poison Plants Committee comprised of officers in charge of the various scientific branches of the Department, and the Australian Wool Board has made available a sum of money to the Department of Agriculture and Stock for the purpose of contributing to some of the expenses entailed in conducting the investigation of suspected poison plants. In this connection, so far, 157 plant samples have been examined, most of such samples having been tested for their hydrocyanic acid content, though in some the presence of an alkaloid has been detected.

For the purpose of ascertaining if the hydrocyanic acid content of certain plants varies during different periods of the year, periodical quantitative analyses have been made on known cyanogenetic plants, and in some cases these analyses have been made on young and mature growths. The plants tested are:—*Ximenia Americana, Heterodendron oleaefolium,* broad and narrow-leaved forms, *Eremophila maculata,* and *Andrachne decaisnei.* The analyses of these plants, tested at different periods of the year, are given on the attached table.

The above matter refers only to the work done on the chemical side of the investigation, as very many feeding trials have been conducted by other officers of the Department.

PEST DESTROYERS.

The number of samples of pest destroyers analysed this year was more than double the number analysed last year. Considerable routine analytical work was done on matters in connection with experiments conducted by other officers of the Department. Thus, in continuation of last year's experiments conducted by Mr. Coleman upon the keeping quality of lime-sulphur solutions, 16 samples were analysed to determine their polysulphide sulphur content. Comments on these experiments are made in Mr. Coleman's report.

For research officers of the Division of Plant Industry, the spray residues on 177 plant specimens (tomato and citrus) were analysed to determine the amount of the active spray ingredient remaining upon the plant.

At the request of Drs. Legg and Roberts, experiments were made in the Laboratory to ascertain the retention of cresylic acid in a dip preparation, and the retention of nicotine sulphate in a dip preparation, and periodical samples of these preparations were taken for analysis and reported upon.

Further analyses of a number of periodical samples taken from a dip under field conditions were made to ascertain the nicotine sulphate retention in the dipping fluid.

VETERINARY MEDICINES.

As Chairman of the Veterinary Medicines Board appointed under "*The Veterinary Medicines Act of* 1933," the following is reported:—

The Board held ten meetings, 531 medicines were registered, and 379 licenses were issued.

E. H. GURNEY,
Agricultural Chemist.

CYANOGENETIC PLANTS.

Name of Plant.	Stage.	Where Grown.	HYDROCYANIC ACID (HCN) IN MILLIGRAMS PER 100 GRAMMES OF PLANT IN—																							
			July, 1937.		August, 1937.		September, 1937.		October, 1937.		November, 1937.		December, 1937.		January, 1938.		February, 1938.		March, 1938.		April, 1938.		May, 1938.		June, 1938.	
			On Sample as Received.	On Moisture Free Plant.	On Sample as Received.	On Moisture Free Plant.	On Sample as Received.	On Moisture Free Plant.	On Sample as Received.	On Moisture Free Plant.	On Sample as Received.	On Moisture Free Plant.	On Sample as Received.	On Moisture Free Plant.	On Sample as Received.	On Moisture Free Plant.	On Sample as Received.	On Moisture Free Plant.	On Sample as Received.	On Moisture Free Plant.	On Sample as Received.	On Moisture Free Plant.	On Sample as Received.	On Moisture Free Plant.	On Sample as Received.	On Moisture Free Plant.
Ximenia Americana	Young	Clermont	108·3*	199·5*	111·5*	193·9*	242·2	363·9	277·2	346·5	295·0	455·0	302·0	331·0	266·0	389·0	115·0	230·0	194·0	383·0	177·0	296·0	201·0	425·0	133·0	272·0
Ximenia Americana	Old	Clermont	..	..	..	..	90·0	163·6	286·2	352·9	337·0	381·0	186·0	209·0	..	..	119·0	193·0	162·0	346·0	132·0	219·0	135·0	283·0	103·0	215·0
Heterodendron oleaefolium	Young	Dalby	19·0	29·0	..	..	..	..	37·0	61·0	..	..	..	..	50·0	96·0	..	..	..	..	..	..	..	..	20·0	36·0
Heterodendron oleaefolium	Old	Dalby	17·0	27·0	..	..	..	..	24·0	38·0	..	..	..	..	38·0	73·0	..	..	..	..	..	..	..	..	24·0	46·0
Heterodendron oleaefolium (Broad-leaved form)	Young	Blackall	..	..	..	..	..	..	46·0	52·0	..	..	122·0	151·0	97·0	145·0	99·0	152·0	61·0	95·0	..	..	53·0	65·0	17·0	31·0
Heterodendron oleaefolium (Broad-leaved form)	Old	Blackall	..	..	..	..	..	..	37·0	46·0	49·0	75·0	26·0	36·0	28·0	37·0	42·0	58·0	25·0	36·0	..	..	24·0	34·0	21·0	32·0
Heterodendron oleaefolium (Narrow-leaved form)	Composite	Blackall	..	..	..	..	..	..	..	..	49·0	65·0	47·0	52·0	37·0	40·0	51·0	57·0	66·0	79·0	..	..	46·0	57·0	30·0	43·0
Eremophila maculata	Composite	Blackall	..	..	..	..	..	..	289·0	453·0	511·0	806·0	435·0	818·0	444·0	623·0	677·0	1,468·0	871·0	1,242·0	..	..	..	..	489·0	982·0
Andrachne decaisnei	Young	Longreach	..	..	..	..	..	..	..	..	..	..	..	..	26·0†	86·0†	..	..	..	..	..	..	18·0†	38·0†	..	..
Andrachne decaisnei	Old	Longreach	..	..	..	..	..	..	..	..	..	..	..	..	20·0†	63·0†	..	..	..	..	..	..	13·0†	22·0†	..	..
Andrachne decaisnei	Drying-off	Longreach	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	12·0†	17·0†	..	..

* Leaves and small twigs analysed. All other samples except *Andrachne decaisnei* leaves only analysed.

† Whole plant except roots analysed.

Table I.—ANALYSES OF QUEENSLAND SOILS.

Laboratory No.	Locality.	Description of Soils.	TOTAL ELEMENTS IN THE SOIL, CALCULATED ON SOIL DRIED AT 100° C.									Available Plant Food, Soluble in 1 per cent. Citric Acid.				Total Elements. Lb. per Acre, 12″ Deep.				Available Plant Food, Soluble in 1 per cent. Citric Acid. Lb. per Acre, 12″ Deep.			SOIL ACIDITY.	Remarks.
							Soluble in Hydrochloric Acid. Sp. Gr. 1·115.																PH.	
			Humus.	Combined Water and other Organic Matter	Chlorine.	Nitrogen.	Phosphoric Acid.	Lime.	Magnesia.	Potash.	Total Insoluble Matter.	Phosphoric Acid.	Lime.	Magnesia.	Potash.	Nitrogen.	Phosphoric Acid.	Lime.	Potash.	Phosphoric Acid.	Lime.	Potash.	Water Suspension 1:2	
			%	%	%	%	%	%	%	%	%	%	%	%	%									
4368	MORETON— Laidley	v. dk. br. cl.	2·79	8·86	·021	·156	·23	1·56	·36	·22	65·73	·0328	·3257	·1042	·0091	5,090	7,505	50,906	7,179	1,070	10,628	297	7·36	
4369	Ditto	v. dk. br. cl.	2·46	9·54	·018	·136	·32	1·46	·62	·22	64·04	·0330	·3734	·0588	·0056	4,511	10,616	48,437	7,299	1,095	12,388	186	7·24	
4370	Ditto	v. dk. br. cl.	2·73	12·96	·007	·161	·33	·86	1·31	·14	63·04	·0291	·2121	·0183	·0103	5,473	11,217	29,233	4,759	989	7,209	350	7·28	
4371	Ditto	v. dk. br. cl.	2·12	11·15	·010	·120	·27	·89	·58	·18	65·73	·0175	·2197	·0337	·0104	4,212	9,360	30,979	6,265	609	7,647	362	7·51	
4372	Ditto	v. dk. br. cl.	3·95	12·89	·003	·177	·44	·89	1·10	·14	64·68	·0437	·2392	·0448	·0051	5,535	13,772	27,833	4,378	1,367	7,470	159	6·54	
4373	Ditto	v. dk. br. cl.	2·40	13·67	·007	·118	·34	1·14	1·64	·17	60·85	·0269	·2375	·1229	·0057	3,979	12,743	38,441	5,732	907	8,008	192	7·28	
4374	Ditto	v. dk. br. cl.	3·40	13·51	·007	·173	·39	1·00	·77	·19	63·67	·0374	·2054	·0374	·0069	5,222	11,772	30,185	5,735	1,129	6,200	208	6·62	
4375	Ditto	v. dk. br. cl.	2·66	10·99	·007	·113	·36	·96	·49	·19	63·22	·0210	·2228	·0790	·0083	3,810	12,139	32,371	6,407	708	7,512	280	7·58	
4395	Currumbin	gr. br. cl. l.	2·52	12·52	·007	·345	·26	·99	·19	·54	74·94	·0477	·1415	·0439	·0137	9,954	7,494	28,537	15,566	1,375	4,079	395	7·38	
4396	Ditto	lt. gr. br. cl.	2·25	12·67	·007	·100	·31	·97	·74	·56	60·18	·0157	·1933	·0133	·0304	2,937	9,104	28,488	16,447	461	5,677	893	6·67	
4534	Yarraman	br. cl. l. ..	4·10	7·00	·005	·284	·08	·17	·15	·06	67·40	·0080	·0810	·0100	·0130	9,036	2,513	5,536	1,941	254	2,577	414	5·50	
4535	Ditto	br. cl. l. ..	3·20	7·20	·005	·210	·04	·17	·14	·08	76·80	·0080	·0750	·0120	·0110	6,335	1,096	5,056	2,436	244	2,162	335	5·70	
4536	Beerwah	sandy soil..	1·20	2·50	·007	·068	·007	·227	·13	·036	90·90	·0020	·0770	·0060	·0040	2,478	255	8,272	1,312	73	2,806	146	5·90	
4537	Ditto	sandy soil..	1·30	4·40	·007	·103	·008	·201	·11	·043	86·30	·0010	·0370	·0070	·0030	3,557	276	6,942	1,485	34	1,278	103	5·60	
4538	Ditto	sandy soil..	1·20	4·90	·007	·097	·009	·071	·13	·017	86·00	·0010	·0330	·0060	·0050	3,218	298	2,355	564	34	1,095	166	5·50	
4541	Yarraman	rd. br. cl. l.	2·86	12·65	·020	·318	·275	·442	·11	·207	53·40	·0010	·2030	·0200	·0170	9,685	8,376	13,462	6,304	30	6,183	518	5·90	
4542	Ditto	rd. br. cl. l.	2·64	12·31	·020	·317	·280	·515	·18	·197	45·70	·0010	·2500	·0260	·0210	9,655	8,528	15,685	6,000	30	7,614	639	7·50	
4544	Glasshouse Mountains	rd. br. cl. l.	·51	1·89	·010	·022	·024	·060	·02	·160	92·00	·0020	·0070	·0040	·0040	796	868	2,025	5,967	72	253	144	5·30	
4586	Calvert	v. dk. br. cl. l.	2·09	7·54	·003	·147	·14	·57	·28	·31	80·78	·0256	·1951	·0111	·0100	5,157	4,911	19,995	10,875	898	6,844	351	6·14	
4590	Deagon	bl. gr. s. l.	4·97	2·86	·010	·278	·191	·543	·04	·072	91·30	·1120	·2900	·0370	·0170	8,013	5,506	15,652	2,075	3,228	8,359	490	6·80	
4591	Beerwah	br. s. l. ..	·63	4·05	·010	·056	·03	·02	·04	·15	89·42	·0005	·0084	·0055	·0101	2,193	1,175	783	5,874	19	329	396	5·02	
4592	Ditto	lt. rd. br. s. cl.	·52	3·76	·011	·039	·02	·03	·09	·21	85·21	·0002	·0056	·0129	·0042	1,421	729	1,093	7,652	7	204	153	4·73	
4603	Yarraman	choc. cl. ..	2·34	15·51	·002	·288	·09	·34	·15	·12	44·96	·0015	·1772	·0091	·0173	9,163	2,863	10,817	3,818	48	5,638	550	6·83	
4604	Ditto	choc. cl. ..	2·86	4·19	·002	·358	·16	·38	·15	·16	62·17	·0021	·2500	·0077	·0206	10,806	4,829	11,470	4,829	63	7,546	622	7·73	
4612	Coorparoo	gr. bl. l. ..	2·77	8·41	·004	·272	·31	2·43	·25	·19	74·54	·0838	·6700	·0271	·0083	9,024	10,285	80,618	6,308	2,780	22,228	275	8·07	Nursery Plot.
4621	Lake Clarendon ..	v. dk. br. cl.	2·18	10·64	·001	·156	·30	1·11	·14	·33	70·03	·0305	·2285	·0101	·0123	5,067	9,817	36,524	10,858	1,003	7,518	405	5·81	
4520	PORT CURTIS— Adelaide Park ..	s. l. ..	..	3·77	..	·067	·025	·11	·02	·08	..	..	..	..	..	..	..	..	..	..	..	..	5·13	

	DARLING DOWNS—																						
4389	Crystal Brook ..	dk. gr. bl. cl. l.	1·72	8·72	·010	·151	·09	1·24	·37	·51	62·46	·0012	·3524	·0144	·0095	4,927	3,165	40,595	16,642	39	11,499	310	8·00
4390	Ditto	gr. bl. cl. l.	1·69	9·68	·010	·292	·07	2·34	·23	·49	71·02	·0146	·3288	·0153	·0156	9,528	2,317	76,359	15,989	476	10,729	509	8·20
4399	Toolburra	v. dk. br. cl.	·70	5·48	·014	·228	·22	1·00	·23	·32	74·63	·0200	·6597	·0194	·0172	7,068	6,975	31,001	9,920	620	20,451	533	8·59
4400	Pozieres	gr. s. ..	·51	1·01	·010	·062	·02	·05	·03	·02	97·80	·0010	·0180	·0040	·0070	2,950	1,094	2,331	952	47	856	333	4·80
4401	Ditto	gr. s. ..	·82	1·91	·010	·062	·04	·07	·04	·03	95·50	·0010	·0210	·0040	·0130	2,866	1,757	3,236	1,340	46	971	601	5·00
4620	Allenby Creek ..	gr. cl. ..	1·08	4·79	·003	·067	·02	·14	·29	·07	90·80	·0008	·0616	·0051	·0054	2,751	821	5,749	2,874	33	2,505	223	5·96
	WIDE BAY—																						
4361	Goomboorian ..	br. cl. l. ..	4·76	9·27	·010	·421	·22	·46	·15	·52	67·50	·0100	·2150	·0100	·0240	11,906	6,278	13,151	14,706	283	6,080	679	6·70
4364	Bundaberg	v. dk. rd. l.	1·07	7·34	·003	·141	·02	·13	·08	·07	75·76	·0006	·0611	·0111	·0037	6,365	903	5,868	3,159	27	2,758	167	7·62
4365	Ditto	dk. choc. l.	1·25	7·55	·003	·125	·03	·16	·07	·07	77·53	·0007	·1172	·0530	·0042	5,711	1,370	7,309	3,197	31	5,354	192	7·82
4366	Ditto	v. dk. br. l.	1·18	7·24	·005	·133	·02	·11	·06	·07	74·88	·0008	·0788	·0146	·0057	6,293	946	5,240	3,312	37	3,728	269	6·98
4367	Ditto	dk. choc. l.	1·19	3·45	·007	·112	·03	·14	·06	·06	90·01	·0016	·0873	·0108	·0057	5,756	1,541	7,195	3,083	82	4,482	393	7·44
4543	Ditto	rd. br. s. l.	1·30	5·60	·010	·113	·03	·16	·03	·09	81·10	·0010	·1220	·0160	·0080	3,779	1,137	5,452	2,910	33	4,081	267	7·30
4579	Imbil	dk. br. s. l.	2·55	..	..	·217	..	..	..	..	..	·0050	·0810	·0230	·0060	..	..	..	..	..	..	..	5·76
4580	Ditto	dk. br. s. ..	1·55	..	..	·157	..	..	..	..	..	·0020	·0910	·0400	·0060	..	..	..	..	..	..	..	5·83
4581	Ditto	dk. br. cl. l.	1·85	..	..	·204	..	..	..	..	..	·0040	·0920	·0520	·0050	..	..	..	..	..	..	..	5·75
4582	Ditto	dk. br. cl. l.	1·65	..	..	·185	..	..	..	..	..	·0040	·0850	·0560	·0050	..	..	..	..	..	..	..	5·77
4605	Como	dk. rd. l. ..	3·95	17·18	·011	·266	·05	·05	·10	·03	51·11	·0017	·0121	·0244	·0039	7,667	1,441	1,441	865	49	349	112	5·01
4606	Ditto	dk. rd. l. ..	8·10	11·60	·009	·243	·04	·13	·08	·02	60·01	·0007	·0427	·0363	·0078	7,318	1,251	4,065	625	22	1,335	244	5·39
	COOK—																						
4347	Kureen	dk. rd. l. ..	2·46	19·84	·010	·302	·15	·24	·12	·07	33·28	·0012	·0366	·0071	·0189	10,265	5,148	8,389	2,449	42	1,280	661	5·18
4348	Ditto	dk. rd. l. ..	2·89	19·10	·011	·296	·19	·16	·11	·09	31·75	·0013	·0767	·0077	·0321	10,544	6,768	5,699	3,206	46	2,732	1,143	6·49
4349	Yungaburra ..	choc. l. ..	3·24	19·52	·010	·387	·34	1·19	1·62	·22	38·25	·0032	·3875	·0107	·0458	14,953	13,036	45,628	8,435	207	14,857	1,756	8·27
4588	Barron	br. cl. l. ..	2·15	9·11	·020	·255	·25	·52	·19	·31	69·00	·0250	·4010	·0580	·0430	7,905	7,750	16,213	9,703	775	12,431	1,333	7·38
4589	Ditto	br. cl. l. ..	2·60	9·23	·020	·291	·23	·24	·12	·29	66·20	·0130	·2270	·0580	·0510	9,417	7,346	7,766	9,514	421	7,346	650	6·80
4613	Atherton	choc. l. ..	2·77	14·57	·005	·279	·33	·52	·32	·17	42·12	·0027	·2400	·0565	·0112	9,408	11,127	17,534	5,732	91	8,093	377	8·83
4614	Ditto	dk. rd. br. l.	3·73	23·68	·006	·421	·17	·12	·12	·05	27·33	·0045	·0825	·0827	·0144	12,593	5,085	3,589	1,496	135	2,468	341	6·46
4615	Ditto	dk. rd. br. l.	3·59	18·56	·006	·375	·18	·08	·11	·05	35·88	·0041	·0264	·0031	·0094	10,911	5,237	2,328	1,454	119	768	273	5·62
4637	Clump Point ..	lt. br. l. ..	2·20	4·90	·020	·192	·06	·07	·02	·76	80·10	·0001	·0640	·0020	·0110	5,952	1,891	2,263	23,560	3	1,984	341	4·61
4638	Ditto	lt. br. l. ..	2·00	5·10	·020	·197	·05	·08	·03	·88	79·90	·0009	·0210	·0020	·0100	6,053	1,721	2,458	27,103	27	645	307	4·61
	LEICHHARDT—																						
4346	Littledale	v. dk. br. cl.	1·26	8·34	·010	·150	·07	4·15	·67	·19	61·04	·0012	·1366	·0567	·0227	5,677	2,722	161,380	7,388	42	5,311	882	6·76
	WARREGO—																						
4578	Charleville	br. s. l. ..	·65	2·17	·002	·068	·04	·12	·08	·21	93·25	·0106	·0694	·0179	·0296	3,014	1,773	5,319	9,308	470	3,076	1,312	7·60

Table I.—ANALYSES OF QUEENSLAND SOILS—*continued.*

Laboratory No.	Locality.	Description of Soils.	TOTAL ELEMENTS IN THE SOIL, CALCULATED ON SOIL DRIED AT 100° C.									Available Plant Food, Soluble in 1 per cent. Citric Acid.				Total Elements, Lb. per Acre, 12″ Deep				Available Plant Food, Soluble in 1 per cent. Citric Acid. Lb. per Acre, 12″ Deep.			SOIL ACIDITY.	Remarks.
							Soluble in Hydrochloric Acid, Sp. Gr. 1·115.																PH.	
			Humus.	Combined Water and other Organic Matter.	Chlorine.	Nitrogen.	Phosphoric Acid.	Lime.	Magnesia.	Potash.	Total Insoluble Matter.	Phosphoric Acid.	Lime.	Magnesia.	Potash.	Nitrogen.	Phosphoric Acid	Lime.	Potash.	Phosphoric Acid	Lime.	Potash.	Water Suspension 1 : 2	
			%	%	%	%	%	%	%	%	%	%	%	%	%									
	NORTH KENNEDY—																							
4516	Bowen	coarse s. l.	..	3·80	..	·067	·14	·74	·02	·26	59·74	..	..	..	..	..	..	..	..	..	..	..	7·37	
4517	Ditto	s. l. ..	..	3·70	..	·061	·11	1·26	·02	·23	61·17	..	..	..	..	..	..	..	..	..	..	..	6·22	
4518	Ditto	s. l. ..	..	3·56	..	·061	·10	·49	·02	·21	62·54	..	..	..	..	..	..	..	..	..	..	..	6·30	
4519	Innisfail	cl. l. ..	..	11·95	..	·336	·32	..	·01	·06	27·34	..	..	..	..	..	..	..	..	..	..	..	5·41	
	SOUTH KENNEDY—																							
4397	Finch Hatton ..	med. gr. cl. l.	1·56	6·18	·007	·310	·04	·81	·08	·39	81·00	·0350	·3000	·0100	·0300	9,915	1,476	25,927	12,546	1,123	9,530	995	8·10	
4398	Ditto	med. gr. cl.	2·14	2·55	·003	·190	·08	1·21	·21	·27	85·40	·0280	·1800	·0090	·0130	6,288	2,809	40,338	9,165	936	5,954	435	7·16	
4616	Calen	bl. cl. ..	1·23	4·78	·001	·093	·06	·09	·18	·29	86·82	·0027	·0400	·0063	·0132	3,515	2,268	3,402	10,962	102	1,512	499	5·42	
	MITCHELL—																							
4391	Mineeda	med. gr. cl.	·50	3·43	·008	·093	·04	1·01	·02	·61	77·60	·0090	·3510	·0170	·0130	2,757	1,245	29,967	18,170	267	10,404	385	8·75	
4392	Ditto	gr. cl. ..	·49	4·07	·050	·080	·006	1·61	·08	·58	80·90	·0030	·3430	·0100	·0070	2,523	189	50,944	18,327	95	10,788	221	9·08	
4393	Ditto	br. gr. cl. ..	..	4·06	·320	·050	·02	3·11	·15	·64	76·80	·0070	·7820	·0110	·0170	1,564	657	97,164	20,139	219	24,455	532	8·92	
4394	Ditto	lt. br. cl. ..	..	2·95	·310	·042	·05	1·62	·50	·50	78·10	·0090	·6140	·0120	·0110	1,245	1,571	47,989	14,850	267	18,199	326	8·91	
4406	Portland Downs ..	lt. gr. br. s. cl.	·78	4·20	·007	·040	·05	·31	·17	·51	82·87	·0077	·1310	·0418	·0210	1,522	1,904	11,802	19,416	293	4,987	799	7·74	
4407	Ditto	dk. gr. br. s. cl.	1·14	4·25	·010	·057	·04	·34	·15	·52	82·14	·0019	·1587	·0431	·0132	2,030	1,425	12,112	18,524	68	5,653	470	7·89	
4408	Ditto	lt. gr. br. s. l.	·50	1·84	·007	·045	·03	·29	·16	·31	91·38	·0024	·0820	·0073	·0112	1,774	1,183	11,435	12,223	98	3,233	442	7·29	
4409	Ditto	gr. br. s. l.	·51	1·76	·003	·028	·04	·15	·09	·26	92·71	·0082	·0694	·0053	·0148	1,241	1,773	6,649	11,525	363	3,076	656	7·18	
4584	Duthie Park ..	dk. gr. br. cl. l.	2·77	11·41	·192	·284	·38	2·92	·77	·73	72·86	·1370	·2362	·0717	·0363	9,985	13,227	101,638	25,409	4,769	8,222	1,263	7·69	
4585	Ditto	lt. gr. br. cl. l.	·84	10·21	·020	·080	·08	4·58	·81	·72	68·48	·0259	1·0556	·0814	·0106	3,024	3,024	173,119	27,215	979	39,901	401	7·07	
	BURKE—																							
4583	Hughenden	gr. bl. s. l.	·96	3·02	·002	·073	·08	·44	·30	·42	90·84	·0312	·1579	·0119	·0168	3,176	3,481	19,144	18,274	1,357	6,870	731	7·75	
	NEW GUINEA—																							
4587	Vunalama	yl. gr. l. ..	1·99	7·73	·002	·134	·10	·65	·11	·28	78·62	·0126	·0545	·0290	·0239	3,316	2,474	16,085	6,929	312	6,298	591	6·53	Coffee Soil.

Table II.—SOME QUEENSLAND SOILS (PHYSICAL PROPERTIES AND MECHANICAL ANALYSES).

Laboratory No.	Locality.	Description of Soils.	Ph. Water Suspension 1 : 2.	Properties of the Soil.								Mechanical Analyses.							Chemical Analyses.		
				Apparent Specific Gravity.	Weight of Soil per Acre, 12" deep.	Capacity for Water.	Absorbed Weight of Water, 12" deep.	Capillarity (in Inches). After 3 Hours.	After 6 Hours.	After 24 Hours.	After 48 Hours.	Coarse Sand. ·2-2 m.m.	Fine Sand. ·02-·2 m.m.	Silt. ·002-·02 m.m.	Clay. Less than ·002 m.m.	Loss on Acid Treatment.	Moisture.	Organic Matter removed by Hydrogen Peroxide (by difference).	Humus.	Organic Matter and Combined Water.	Nitrogen.
					Tons.	%	Tons.					%	%	%	%	%	%	%	%	%	%
	MORETON—																				
4368	Laidley	v. dk. br. cl. ..	7·36	1·20	1,457	56	815	9¼	11¾	16⅞	19¼	·51	28·34	26·63	31·40	1·96	7·62	3·54	2·79	8·86	·156
4369	Ditto	v. dk. br. cl. ..	7·24	1·22	1,481	60	828	8	10⅛	16	18½	·14	22·14	28·80	36·33	1·37	7·21	4·01	2·46	9·54	·136
4370	Ditto	v. dk. br. cl. ..	7·28	1·25	1,517	56	849	3¾	4⅝	7¾	7½	·29	10·72	24·07	46·80	6·66	6·29	5·17	2·73	12·96	·161
4371	Ditto	v. dk. br. cl. ..	7·51	1·28	1,553	62	963	1	1¾	2¼	2¼	·19	8·64	22·45	51·75	6·80	7·59	2·48	2·12	11·15	·120
4372	Ditto	v. dk. br. cl. ..	6·54	1·15	1,396	60	837	9½	11	15	17½	·17	9·14	35·35	41·85	6·96	5·49	1·04	3·95	12·89	·177
4373	Ditto	v. dk. br. cl. ..	7·28	1·24	1,505	68	1,023	2	2⅜	4½	5¼	·03	8·40	24·45	51·02	7·74	5·39	2·97	2·40	13·67	·118
4374	Ditto	v. dk. br. cl. ..	6·62	1·11	1,347	64	862	7⅝	9¼	12⅞	14½	·14	9·26	27·85	44·82	7·40	6·32	4·21	3·40	13·51	·173
4375	Ditto	v. dk. br. cl. ..	7·58	1·24	1,505	66	993	1⅞	2¼	3	3⅜	·04	7·40	21·85	55·05	7·87	6·41	1·38	2·66	10·99	·113
4395	Currumbin	gr. br. cl. l. ..	7·38	1·06	1,287	50	643	4¼	7¾	10¾	11¾	..	..	..	..	..	..	..	2·52	12·52	·345
4396	Ditto	lt. gr. br. cl. l...	6·67	1·08	1,311	49	642	6½	7½	9	9¾	..	..	..	..	..	..	..	2·25	12·67	·100
4534	Yarraman	br. cl. l. ..	5·50	1·17	1,420	50	710	7½	9½	15	17½	12·10	33·50	21·10	27·20	1·90	3·60	·60	4·10	7·00	·284
4535	Ditto	br. cl. l. ..	5·70	1·12	1,360	52	707	5	7	11	13	9·00	38·00	24·20	23·40	1·80	2·80	·80	3·20	7·20	·210
4536	Beerwah	sandy soil ..	5·90	1·34	1,627	42	683	10¼	11	12	12¼	..	..	..	..	..	..	..	1·20	2·50	·068
4537	Ditto	sandy soil ..	5·60	1·27	1,542	48	740	8½	9	9½	10	..	..	..	..	..	..	..	1·30	4·40	·103
4538	Ditto	sandy soil ..	5·50	1·22	1,481	54	800	9¾	10	10¼	10½	..	..	..	..	..	..	..	1·20	4·90	·097
4541	Yarraman	rd. br. cl. l. ..	5·90	1·12	1,360	56	762	6¼	7¼	8¼	8½	9·90	12·90	11·70	58·00	1·70	5·00	·80	2·86	12·65	·318
4542	Ditto	rd. br. cl. l. ..	7·50	1·12	1,360	60	816	11½	12½	13¼	13¾	11·70	12·00	11·50	57·40	1·80	4·90	·70	2·64	12·31	·317
4544	Glasshouse Mountains	rd. br. cl. l. ..	5·30	1·33	1,614	38	613	8	8¾	10	11¼	..	..	..	..	..	..	..	·51	1·89	·022
4586	Calvert	v. dk. br. cl. l...	6·14	1·29	1,566	35	548	6	7½	11¼	13⅝	..	..	..	..	..	..	..	2·09	7·54	·147
4590	Deagon	bl. gr. s. l. ..	6·80	1·06	1,287	70	901	5½	7¼	8¾	9½	..	..	..	..	..	..	..	4·97	2·86	·278
4591	Beerwah	br. s. cl. ..	5·02	1·44	1,748	36	629	5¾	7¾	10¾	12¼	30·27	43·05	9·45	13·50	·74	·99	2·00	·63	4·05	·056
4592	Ditto	lt. rd. br. s. cl...	4·73	1·34	1,626	44	715	9⅞	10½	11⅝	15¾	26·32	35·25	12·60	22·72	·14	1·62	1·34	·52	3·76	·039
4603	Yarraman	choc. cl. ..	6·83	1·17	1,420	56	739	9¼	10¾	12¾	13¼	..	..	..	..	..	..	..	2·34	15·51	·288
4604	Ditto	choc. cl. ..	7·73	1·11	1,347	60	808	7½	8½	9¾	10	..	..	..	..	..	..	..	2·86	4·19	·358
4612	Coorparoo	gr. bl. l. ..	8·07	1·22	1,481	49	726	7¾	9⅝	12¾	14⅜	..	..	..	..	..	..	..	2·77	8·41	·272
4621	Lake Clarendon	v. dk. br. cl. ..	5·81	1·21	1,469	52	763	8⅝	11	16⅝	18¾	..	..	..	..	..	..	..	2·18	10·46	·156
	PORT CURTIS—																				
4520	Adelaide Park	s. l.	5·13	1·61	977	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3·77	·067
	DARLING DOWNS—																				
4389	Crystal Brook	dk. gr. bl. cl. l.	8·00	1·20	1,457	46	670	6¼	8½	12¾	14½	4·09	32·67	7·17	45·15	3·04	4·98	2·90	1·72	8·72	·151
4390	Ditto	gr. bl. cl. l. ..	8·20	1·20	1,457	46	670	4¾	7	12¾	16	3·70	26·06	8·17	48·37	5·18	6·04	2·47	1·69	9·68	·292
4399	Toolburra	v. dk. br. cl. ..	8·59	1·14	1,384	50	690	..	..	..	..	..	..	..	..	..	..	..	·70	5·48	·228
4400	Poziers	gr. s.	4·80	1·75	2,124	24	510	9½	10¾	11¾	12½	..	..	..	..	..	..	..	·51	1·01	·062
4401	Ditto	gr. s.	5·00	1·70	2,064	24	495	10	11½	16	18¾	..	..	..	..	..	..	..	·82	1·91	·062
4620	Allenby Creek	gr. cl.	5·96	1·51	1,833	35	642	4½	6½	11¾	14⅝	..	..	..	..	..	..	..	1·08	4·79	·067

Table II.—SOME QUEENSLAND SOILS (PHYSICAL PROPERTIES AND MECHANICAL ANALYSES)—*continued.*

Laboratory No.	Locality.	Description of Soils.	Ph. Water Suspension 1 : 2	Properties of the Soil.								Mechanical Analyses.							Chemical Analyses.		
				Apparent Specific Gravity.	Weight of Soil per Acre, 12" deep.	Capacity for Water.	Absorbed Weight of Water, 12" deep.	Capillarity (in Inches). After 3 Hours.	After 6 Hours.	After 24 Hours.	After 48 Hours.	Coarse Sand. ·2-2 m.m.	Fine Sand. ·02-·2 m.m.	Silt. ·002-·02 m.m.	Clay. Less than ·002 m.m.	Loss on Acid Treatment.	% Moisture.	Organic Matter Removed by Hydrogen Peroxide (by difference).	Humus.	Organic Matter and Combined Water.	Nitrogen.
					Tons.	%	Tons.					%	%	%	%	%	%	%	%	%	%
	WIDE BAY—																				
4361	Goomboorian	br. cl. l.	6·70	1·04	1,262	78	707	4¾	6½	9¾	11½	..	..	..	..	..	..	..	4·76	9·27	·421
4364	Bundaberg	v. dk. rd. l.	7·62	1·66	4,505	34	1,532	8¼	9¼	10¾	13	..	..	..	..	..	..	..	1·07	7·34	·141
4365	Ditto	dk. choc. l.	7·82	1·68	4,559	34	1,550	8¼	9	11¼	13	..	..	..	..	..	..	..	1·25	7·55	·125
4366	Ditto	v. dk. br. l.	6·98	1·74	4,722	36	1,700	10¼	11¾	14¼	15¼	..	..	..	..	..	..	..	1·18	7·24	·133
4367	Ditto	dk. choc. l.	7·44	1·89	5,129	32	1,641	11¼	12¾	15¼	16¼	..	..	..	..	..	..	..	1·19	3·45	·112
4543	Ditto	rd. br. s. l.	7·30	1·23	1,493	46	687	7	7¾	8¾	9½	..	..	..	..	..	..	..	1·30	5·60	·113
4579	Imbil	dk. br. s. l.	5·76	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2·55	..	·217
4580	Ditto	dk. br. s.	5·83	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1·55	..	·157
4581	Ditto	bk. br. cl. l.	5·75	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1·85	..	·204
4582	Ditto	dk. br. cl. l.	5·77	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1·65	..	·185
4605	Como	dk. rd. l.	5·01	1·06	1,287	62	798	8¼	9⅝	12	13	..	..	..	..	..	..	..	3·95	17·18	·226
4606	Ditto	dk. rd. l.	5·39	1·15	1,396	56	782	8¾	9¾	11¼	12	..	..	..	..	..	..	..	8·10	11·60	·243
	COOK—																				
4347	Kureen	dk. rd. l.	5·18	1·25	1,517	54	819	7	7½	9¼	10¼	..	..	..	..	..	..	..	2·46	19·84	·302
4348	Ditto	dk. rd. l.	6·49	1·31	1,590	54	858	12½	14¾	16¾	17½	..	..	..	..	..	..	..	2·89	19·10	·296
4349	Yungaburra	choc. l.	8·27	1·41	1,712	53	907	8¼	10¼	13	14¾	..	..	..	..	..	..	..	3·24	19·52	·387
4588	Barron	br. cl. l.	7·38	1·14	1,384	68	941	6	7¾	10	11¾	..	..	..	..	..	..	..	2·15	9·11	·255
4589	Ditto	br. cl. l.	6·80	1·19	1,444	68	982	7	9¼	14	16	..	..	..	..	..	..	..	2·60	9·23	·291
4613	Atherton	choc. l.	8·83	1·24	1,505	52	781	8¾	11⅛	16¼	19	4·76	10·16	17·35	53·40	3·51	5·75	5·07	2·77	14·57	·279
4614	Ditto	dk. rd. br. l.	6·46	1·10	1,335	56	747	7	8½	10¾	11⅜	2·58	6·04	17·20	58·80	4·92	7·00	3·46	3·73	23·68	·421
4615	Ditto	dk. rd. br. l.	5·62	1·07	1,299	60	779	7¾	9⅛	11⅝	13⅛	2·32	7·38	23·45	50·45	3·11	8·87	4·42	3·59	18·56	·375
4637	Clump Point	lt. br. l.	4·61	1·14	1,384	64	886	5½	6½	8½	9½	16·80	24·40	18·20	35·60	·60	3·90	·50	2·20	4·90	·192
4638	Ditto	lt. br. l.	4·61	1·13	1,372	64	878	6	6¾	8¼	9	16·60	26·60	16·50	34·60	1·70	3·60	·40	2·00	5·10	·197
	LEICHHARDT—																				
4346	Littledale	v. dk. br. cl. l.	6·76	1·43	1,736	44	764	7¼	8½	11	13¾	..	..	..	..	..	..	..	1·26	8·34	·150
	WARREGO—																				
4578	Charleville	br. s. l.	7·60	1·63	1,979	20	396	13½	15¾	20¼	22¾	28·08	54·27	5·67	10·80	·69	·38	·11	·65	2·17	·063

	NORTH KENNEDY—																				
4516	Bowen	coarse s. l. ..	7·37	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3·80	·067
4517	Ditto	s. l.	6·22	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3·70	·061
4518	Ditto	s. l.	6·30	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3·56	·061
4519	Innisfail	cl. l.	5·41	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11·95	·336
	SOUTH KENNEDY—																				
4397	Finch Hatton	med. gr. cl. l. ..	8·10	1·18	1,432	68	974	4¾	5¼	7¼	10½	..	..	..	..	..	..	..	1·56	6·18	·310
4398	Ditto	med. gr. cl. ..	7·16	1·23	1,493	56	836	10½	12¼	16¼	20	..	..	..	..	..	..	..	2·14	2·55	·190
4616	Calen	bl. cl.	5·42	1·39	1,687	40	675	8⅞	11¾	17¼	20⅜	..	..	..	..	..	..	..	1·23	4·87	·093
	MITCHELL—																				
4391	Mineeda	med. gr. cl. ..	8·75	1·09	1,323	64	846	7	8¾	11⅞	16½	·90	22·50	12·60	50·70	2·80	10·00	·50	·50	3·43	·093
4392	Ditto	gr. cl.	9·08	1·16	1,408	74	1,042	4¼	5½	8½	12	·70	20·90	13·60	52·30	3·10	9·00	·40	·49	4·07	·080
4393	Ditto	br. gr. cl. ..	8·92	1·15	1,396	60	921	5¼	6¼	9½	12¼	1·30	20·90	11·20	49·70	5·90	10·80	·20	..	4·06	·050
4394	Ditto	lt. br. cl. ..	8·91	1·09	1,323	66	873	4	5¼	8	12½	1·00	25·10	19·50	43·10	3·30	7·90	·10	..	2·95	·042
4406	Portland Downs	lt. gr. br. s. cl. ..	7·74	1·40	1,699	38	645	9¼	12½	18⅞	22½	14·92	34·02	11·53	35·15	·53	3·25	·60	·78	4·20	·040
4407	Ditto	dk. gr. br. s. cl.	7·89	1·31	1,590	44	699	8½	11	16⅜	17½	15·26	31·49	9·82	38·82	·65	3·25	·71	1·14	4·25	·057
4408	Ditto	lt. gr. br. s. l. ..	7·29	1·45	1,760	59	598	13	15	20½	23	27·77	43·78	6·32	20·02	·38	1·19	·54	·50	1·84	·045
4409	Ditto	gr. br. s. l. ..	7·18	1·63	1,979	24	475	11½	14½	21⅞	24⅜	28·37	49·48	7·12	13·30	·42	·81	·50	·51	1·76	·028
4584	Duthie Park	dk. gr. br. cl. l.	7·69	1·28	1,554	46	714	6⅝	7⅛	9⅞	10⅞	..	..	..	..	..	..	..	2·77	11·41	·284
4585	Ditto	lt. gr. br. l. ..	7·07	1·39	1,687	40	674	1	1⅞	4⅛	5⅛	..	..	..	..	..	..	..	·84	10·21	·080
	BURKE—																				
4583	Hughenden	gr. bl. l. ..	7·75	1·60	1,942	19	369	11½	13¼	16⅞	19	..	..	..	..	..	..	..	·96	3·02	·037
	NEW GUINEA—																				
4587	Vunalama	yl. br. l. ..	6·53	0·91	1,105	63	696	12⅞	17¼	28⅞	35¼	13·21	35·84	27·85	12·20	2·47	4·46	3·97	1·99	7·73	·134

Table III.—ANALYSES OF PASTURE GRASSES, ROUGHAGE, HERBAGE, AND SHRUBS, &c.

Number of Analysis.	Month Cut.	Name of Grass, Herbage, or Shrub.	Local Name.	District.	Analysis of Water-free Material. Crude Protein.	Crude Fat.	Carbohydrates.	Crude Fibre.	Crude Ash.	Lime, CaO.	Phosphoric Acid, P_2O_5.	Remarks. (Chiefly made by senders.)
					%	%	%	%	%	%	%	
841	July ..	Flinders	..	Kynuna (K.)	4·6	1·9	48·8	35·1	9·6	·322	·248	
1801	April	Ensilage (*Imphee saccharina*)	..	Yeerongpilly	6·0	1·8	54·6	28·9	8·7	·363	·483	Total acid as acetic ·21 per cent. Light brown. Acid. Only been in silo since April.
1847	September	*Astrebla elymsides* (chiefly)	Weeping Mitchell	Burketown (K.)	4·2	0·9	51·7	30·8	12·4	·552	·127	
1848	September	*Astrebla pectinata* (chiefly)	Barley Mitchell	Burketown (K.)	3·3	0·6	52·0	33·7	10·4	·349	·082	
1849	September	*Astrebla squarrosa* (chiefly)	Bull Mitchell	Burketown (K.)	2·9	0·6	51·9	32·6	12·0	·568	·085	
1850	September	*Botriochloa Ewartiana* with some *Asistida* and *astrebla* spp.	..	Burketown (K.)	2·7	1·0	48·7	39·2	8·4	·365	·083	
1851	September	*Iseilma sp.*	Flinders Grasses	Burketown (K.)	1·9	0·6	49·5	33·6	14·4	·458	·088	
1852	September	?	..	Burketown (K.)	2·9	0·6	52·4	35·2	8·9	·385	·076	
2164	October	*Melinis minutiflora*	Molasses Grass	South Johnstone	13·0	1·2	46·8	31·1	7·9	·449	·455	
2165	October	*Panicum muticum*	Giant Couch	South Johnstone	18·3	1·1	39·9	28·1	12·6	·598	·599	
2504	October	*Pennisetum clandestinum*	Kikuyu	Toowoomba	26·9	2·1	35·5	20·8	14·7	·650	·913	Young growth.
2505	October	*Digitaria salida*	..	Toowoomba	23·4	2·4	38·9	25·2	10·1	·914	·753	Young growth.
2506	October	*Digitaria erantha*	..	Toowoomba	19·0	2·3	41·2	26·5	11·0	·642	·612	Young growth.
2507	October	*Digitaria pentzii*	..	Toowoomba	18·7	1·9	43·0	28·5	7·9	·726	·604	Young growth.
2508	October	*Cynodon plectostachyum*	Budge Grass	Toowoomba	30·0	3·1	36·7	19·3	10·9	1·462	·989	Young growth.
2509	October	*Panicum maximum*	Guinea Grass	Toowoomba	24·9	2·2	39·1	21·2	12·6	1·053	·788	Young growth.
2510	October	*Digitaria Pole-Evansii*	..	Toowoomba	20·9	2·2	43·6	24·0	9·3	·703	·784	Young growth.
3780	January	Sudan Grass	..	Toowoomba	32·0	2·9	35·5	18·2	11·4	·967	1·136	Young growth. Selected strain, regarded as pure.
3781	January	Sudan Grass	..	Toowoomba	13·1	1·2	47·0	31·1	7·6	·572	·605	In flower.
3782	January	*Urochloa panicoides*	..	Toowoomba	31·8	1·9	29·5	19·6	17·2	·878	1·002	Young growth.

3783	January	*Panicum maximum*	Guinea Grass	Toowoomba	17·7	1·0	38·5	30·3	12·5	·632	·564	In bloom.
3809	January	*Setaria australiensis*	..	Ceratodus (W.)	15·2	1·3	41·5	28·2	13·8	·593	·500	H.C.N. (Emulsin) negative.
3881	January	*Flindersia schottiana*	Bumpy Ash or Cudgerie	Cooloothin Creek	7·0	..	..	..	4·4	1·317	·203	Small sample of leaves, bark, and wood, analysed.
6201	April	Kikuyu Grass	..	Kingston	27·2	..	..	..	..	..	..	HCN negative. Small sample. Grown on sandy soil with clay gravel subsoil. Stock had grazed off the grass and sample represents 10 days growth after shutting out stock.
5974	March	*Anthilophus decipens*	Grass Hay	Biloela	4·7	1·3	47·5	37·9	8·6	·299	·380	This hay is composed almost entirely of Pitted Blue Grass (*Anthilophus decipens*).
6055	March	*Baccharis halinifolia*	Groundsell Bush	Brisbane	7·8	3·0	58·8	22·0	8·4	1·026	·387	From St. Lucia. The sample represents leaves and tips of stems, the parts usually eaten by stock. Plant in budding stage at time of sampling.
6195	April	Rhodes Grass	..	Wambo	5·5	0·8	50·9	35·3	7·5	·421	·244	
6344	..	Pineapple Silage	..	Brisbane	6·3	1·8	57·4	27·9	6·6	·500	·322	Volatile acids as acetic 1·67 per cent. Non-volatile acids as lactic ·495 per cent.
6746	May	Peanut Vine	..	Kingaroy	20·3	2·2	48·4	18·3	10·8	2·31	·19	
6827	May	*Aeschynomene indica*	..	Mackay	20·8	1·5	49·6	20·2	7·9	1·50	·27	Specimen is *Aeschynomene indica*, a legume common on badly drained or wet country. It has some reputation as a fodder and seems it might be of value for the type of country it favours, especially as it is difficult to get plants suitable.
6969	May	*Heterodendron oleaefolium*	Boonaree	Talwood (G.)	10·8	3·5	60·1	19·5	6·1	1·480	·260	Usually eaten by stock in drought, but there have been instances of its killing sheep.
6970	May	*Casuarina lepidophloia*	Belar	Talwood (G.)	10·1	2·5	48·6	27·4	6·5	2·119	·128	Not generally regarded as suitable for continuous feeding.
6971	May	*Capparis Mitchellii*	Bumble	Talwood (G.)	13·6	2·9	52·0	19·5	12·0	2·382	·181	Generally regarded as excellent forage. Also known as native pomegranate and wild orange.
7420	April	Noogoora Burr	Noogoora Burr	Richmond	14·7	2·4	47·5	15·9	19·5	2·282	·750	
4027	January	Dwarf Pink Sorghum	..	Toowoomba	13·9	1·3	65·1	11·4	8·3	·47	·841	Cut at flowering stage.
4028	January	Kalo Sorghum	..	Toowoomba	15·1	1·1	62·1	11·9	9·8	·60	·60	Cut at flowering stage.
4029	January	Brown Yolo Sorghum	..	Toowoomba	15·4	1·3	62·6	12·3	8·4	·52	·76	Cut at flowering stage.
4030	January	Milo Sorghum	..	Toowoomba	15·9	1·1	64·1	10·2	8·7	·60	·64	Cut at flowering stage.
4031	January	Wheatland Milo Sorghum	..	Toowoomba	16·0	1·3	62·2	9·7	10·8	·39	·59	Cut at flowering stage.
5631	March	Wheatland Milo Sorghum	..	Toowoomba	17·7	0·7	43·0	24·6	14·0	·802	·655	Cut after seed head matured.

Table III.—ANALYSES OF PASTURE GRASSES, ROUGHAGE, HERBAGE, AND SHRUBS, &c.—*continued.*

Number of Analysis.	Month Cut.	Name of Grass, Herbage, or Shrub.	Local Name.	District.	Analysis of Water-free Material.							Remarks. (Chiefly made by senders).
					Crude Protein.	Crude Fat.	Carbohydrates.	Crude Fibre.	Crude Ash.	Lime, CaO.	Phosphoric Acid, P_2O_5.	
					%	%	%	%	%	%	%	
5632	March	Dwarf Pink Sorghum		Toowoomba	11·6	1·0	50·5	26·5	10·4	·524	·753	Cut after seed head matured.
5633	March	Day Milo Sorghum		Toowoomba	15·2	0·8	42·1	26·0	15·9	1·171	.500	Cut after seed head matured.
5634	March	Kalo Sorghum		Toowoomba	13·4	0·8	43·0	28·4	14·4	1·021	·419	Cut after seed head matured.
5635	March	Brown Yolo Sorghum		Toowoomba	14·4	0·7	45·9	26·2	12·8	·774	·588	Cut after seed head matured.
6521	May	Nut Grass Foliage		Brisbane	14·1	1·7	42·5	25·0	16·7	·681	·467	
6522	May	Nut Grass Tubers and connecting Fibres		Brisbane	4·9	0·9	62·9	14·2	17·1	·472	·481	
5628		*Cicer arietinum*	Chick Pea	Toowoomba	18·6	1·1	38·3	29·5	12·5	1·540	·874	Plant only.
754		Wheat Chaff		Biloela	9·4	1·0	52·5	31·3	5·8	·381	·670	
7923	June	*Stylosanthes guyanensis*		Mackay	14·2	1·2	42·4	35·3	6·9	1·422	·329	
8424	June	*Cynodon plectostachyum*		South Johnstone	14·7	0·7	44·2	31·0	9·4	·750	·546	Average height 18 inches.
8425	June	*Stylosanthes sundaica*		South Johnstone	13·0	1·5	44·0	31·4	10·1	1·093	·491	Fairly mature.
8426	June	*Stylosanthes guyanensis*		South Johnstone	14·3	1·0	43·2	33·4	8·1	1·308	·384	Fairly mature.

Table IV.—ANALYSES OF GRAIN.

Analysis No.	Name.	Where Grown.	Moisture.	Protein.	Carbohydrates.	Fibre.	Fat.	Ash.	Lime (Ca O).	Phosphoric Acid ($P_2 O_5$)
			%	%	%	%	%	%	%	%
416	Sorghum Seed	. .	12·6	11·9	69·5	1·9	2·4	1·7	·019	·734
417	Brown Yolo	. .	16·0	9·5	67·0	3·0	2·6	1·9	·031	·709
418	Hegari	. .	13·3	12·1	68·4	2·5	2·2	1·5	·030	·543
419	Kalo	. .	14·3	11·4	66·5	2·6	2·8	2·4	·018	1·039
420	Sharon	. .	11·9	11·1	68·4	3·5	2·8	2·3	·020	1·067
421	Wheatland Milo	. .	13·3	11·4	66·0	3·6	2·2	3·5	·052	·597
751	Kalo Kalo Grain Sorghum	Biloela	12·1	11·3	68·5	3·3	3·1	1·7	·028	·828
752	Hegari Grain Sorghum	Biloela	14·5	10·6	68·4	2·7	2·0	1·8	·016	·828
753	Star of Leaming Maize	Biloela	13·2	11·4	65·0	4·4	4·2	1·8	·025	·964
754	Wheaten Chaff	Biloela	12·7	8·2	45·9	27·3	0·9	5·0	·319	·561
5629	*Cicer arietinum* (Chick Pea Seed only)	Toowoomba	12·5	30·7	. .	. .	. .	. .	. .	. .
6197	Yolo Grain Sorghum	Toowoomba	9·4	11·1	70·3	3·7	3·6	1·9	·037	·746
6198	Kalo Grain Sorghum	Toowoomba	10·3	12·5	69·1	3·1	3·2	1·8	·032	·836
6199	Wheatland Milo Grain Sorghum	Toowoomba	10·2	12·6	68·2	4·6	2·5	1·9	·032	·604
6200	Dwarf Pink Grain Sorghum	Toowoomba	8·7	14·6	69·4	3·1	2·4	1·8	·028	·820

Table V.—SOME TROPICAL PASTURES.

Number of Analysis.	Name of Grass.		District.	ANALYSIS OF WATER-FREE MATERIAL.								Remarks.
				PROTEIN.		Crude Fat.	Carbohydrates.	Crude Fibre.	Crude Ash.	Lime (CaO).	Phosphoric Acid. P_2O_5.	
				Crude.	True.							
				%	%	%	%	%	%	%	%	
5229	Mitchell Grass, Sample No. 1		Gatton College	10·9	4·1	1·2	39·2	34·0	14·7	·674	·553	2,833 A.sq.
5230	Mitchell Grass, Sample No. 2		Gatton College	10·8	3·9	1·7	42·9	34·5	10·1	·607	·455	2,705 A.P.
5231	Mitchell Grass, Sample No. 3		Gatton College	11·3	4·1	1·7	42·6	33·0	11·4	·675	·432	2,706 A.P.
5232	Mitchell Grass, Sample No. 4		Gatton College	11·2	4·3	1·5	41·3	35·4	10·6	·575	·479	2,703 A.e.
5233	Mitchell Grass, Sample No. 5		Gatton College	8·6	3·4	1·4	43·6	33·5	12·9	·571	1·056	2,731 A.e.
5234	Mitchell Grass, Sample No. 6		Gatton College	9·4	3·5	1·7	42·1	37·0	9·8	·457	·470	2,716, A.e.
6834	*Brachiaria mutica*	These grasses are variously known in Queensland as:—*Panicum mutica*, Panicum, Para Grass, Giant Couch	South Johnstone.. ..	7·9	2·8	0·8	50·3	30·8	10·2	·327	·471	Pasture Project No. 1. Treatment 1 Weight Sample Received — 1 lb. 15½ oz.
6835	*Brachiaria mutica*		South Johnstone.. ..	8·6	3·4	1·1	48·2	31·4	10·7	·324	·469	Pasture Project No. 1. Treatment 2. Weight Sample Received — 11 oz.
6836	*Brachiaria mutica*		South Johnstone.. ..	6·7	2·8	0·9	51·9	30·9	9·6	·336	·430	General Sample. No. 1 Paddock. Weight Sample Received — 1 lb. 4 oz.
6837	*Brachiaria mutica*		South Johnstone.. ..	6·2	2·8	0·9	51·0	31·4	10·5	·395	·412	General Sample. Nos. 2 and 3 Paddocks. Weight Sample Received = 2 lb. 0½ oz.
6838	*Brachiaria mutica*		South Johnstone.. ..	7·9	2·8	0·9	50·4	30·1	10·7	·422	·564	General Sample. Nos. 4 and 5 Paddocks. Weight Sample Received = 1 lb. 12½ oz.

REPORT OF THE EDITOR OF PUBLICATIONS.

Effective publicity being recognised as one of the essential activities of the Department, an extensive informational service was maintained throughout the year.

There are three main channels for the dissemination of departmental information—official publications, the Press, and radio broadcasts.

It is realised that discoveries and developments in the science and practice of agriculture and animal husbandry should be conveyed to the farmer in a readable form, and that is the function of *The Queensland Agricultural Journal* and other departmental publications.

The *Journal*, which has now entered on its forty-second year of publication, continues to maintain a high standard, both in respect of subject-matter and its presentation. Its usefulness is assured by regular contributions from officers of the research and extension staffs. Over 140 special papers and articles, many of which contain the results of original investigations, were contributed by these officers in the course of the year. In addition, numerous notes on seasonal and topical subjects covering very many points in farm practice, management, and equipment were supplied by technical and field officers.

As an advertising medium, the *Journal* has a definite place in the commercial world, and the revenue from this source has increased substantially.

Considerable progress has been made in the compilation of a much-needed general index.

The circulation of the *Journal* continues to increase steadily, and approximately 112,000 copies were distributed during the past twelve months.

The Weekly News Bulletin has completed its second year. Written, as far as practicable, in an informal and popular style, it is the accepted medium for the supply to metropolitan and country newspapers of short, practical notes of timely and educational value, and recommendations in respect of specific remedies and methods of their application.

The *Bulletin* has come to be regarded as an authoritative source of information of seasonal interest and importance, and the general invitation extended to reprint its contents is largely accepted, particularly by country newspapers. This ready and courteous co-operation of the Press in the dissemination of instructional matter in the form of agricultural news is acknowledged. The *Bulletin* also is an effective link in the general extension services of the Department.

A lively public interest in the welfare of the land industries is reflected in the increased newspaper space given to rural affairs in Queensland. It is generally recognised that material supplied by the Department has practical value, apart from what may be regarded as its news interest. This is shown by an increasing demand for official publications, and also by the claims made on the general informational services of the Department.

Many special articles on rural subjects have been supplied for Press publication, apart from those written for the *Journal* and *Weekly News Bulletin*, in the course of the year.

The services of the Publicity Branch have been extended also to newspaper representatives, freelance writers, and other contributors to journals with both town and country circulations. Assistance has been given to them in obtaining subject-matter and appropriate illustrations for feature articles, by which useful information on matters pertaining to the land industries is conveyed to the general reader. An important aspect of this and similar services is that reasonable accuracy of the matter published is assured, especially in its relationship to the conditions of farming and stock-raising in this State.

Other information relating to the general agricultural situation from time to time, and the results of field and laboratory investigations and regulatory measures are given wide circulation through appropriate channels.

During the year considerable additions were made to the bulletin, pamphlet, and advisory leaflet series of publications, of which 84,850 copies in the aggregate were made available for general distribution.

Among the more important publications of the year were Vol. III. of *The Queensland Agricultural and Pastoral Handbook* and *The Principles of Botany for Queensland Farmers,* to both of which fitting reference has been made in the Report of the Director of Plant Industry (Research).

By arrangement with and through the courtesy of the Australian Broadcasting Commission, broadcast talks to primary producers from the National and associated regional radio stations were continued throughout the year. The institution of the Sunday morning "Countryman's Session" by the Commission was a welcome innovation, with which this Branch is associated to the extent of arranging and dramatizing discussions on general farm topics. The large number of appreciative letters and requests received for further information on the matters discussed indicate the popularity and, perhaps, greater possibilities of this service.

The Official Photographer, Mr. W. J. Sanderson, reports a very busy year in his Section. In addition to the routine work of supplying the requirements of the Department, photographic services were extended to other public departments. The Queensland Government Tourist Bureau, particularly, made heavy demands on the resources of the Section, especially on behalf of the State representation at the Empire Exhibition at Glasgow. For prints and process engravings and lantern slides for public lectures there is a constant demand. Some notable additions to the rural film series of the Department have been made, and many new sets of pictures of pastoral and agricultural life and industry have been obtained.

The delivery of numerous public addresses on different aspects of country life was among the Branch's activities of the year.

THE CENTRAL LIBRARY.

Many new and valuable volumes have been added to the central library. The reorganisation of the library, which was undertaken by the librarian, Mr. A. J. Everist, with the object of extending its usefulness over a much wider field, is approaching completion.

The value of the library for reference purposes, especially to research students, was further demonstrated during the year.

A valuable exchange service, through which publications covering practically the whole range of rural economy are received regularly from every civilized country, has been maintained. As a result, the Department now possesses a very fine collection of agricultural literature.

Through the distribution of monthly accession lists, the resources and the facilities of the library are becoming better known, and are being availed of to an increasing extent, particularly by the field officers. In this way, those concerned are kept in contact with current thought, recent research and technical progress in world agriculture and cognate matters.

Sectional libraries, also, have been well organised and maintained.

JOHN REID,
Editor of Publications.

REPORT OF THE REGISTRAR OF PRIMARY PRODUCERS' CO-OPERATIVE ASSOCIATIONS.

"The Primary Producers' Co-operative Associations Acts, 1923 *to* 1934."

Sir,—In accordance with Rule 53 of Part II. of the Schedule to the abovenamed Acts, I have the honour to submit, for transmission to the Governor in Council, my report for the year ended 30th June, 1938.

Since my last report three additional associations have been registered, making a total of 209 associations and two federations registered under the Acts.

The registrations for the year under review were:—

The Three Moon Dip Co-operative Association Limited.

The Queensland Tobacco Growers' Co-operative Association Limited.

The O'Connell River Co-operative Dip Association Limited.

The associations and federations registered under the Acts to 30th June, 1938, are listed below:—

Bacon Associations.—Having a capital divided into shares with limited liability	4
Barley Association.—Having a capital divided into shares with limited liability	1
Canning, Jam, and Preserving Association.—Having a capital divided into shares with limited liability. (Since cancelled) ..	1
Carrying Association.—Having a capital divided into shares with limited liability	1
Chicken Hatchery Association.—Having a capital divided into shares with limited liability	1
Cold Storage Federation.—Having a capital divided into shares with limited liability	1
Cotton Association.—Having a capital divided into shares with limited liability	1
Dairy, Butter, and Cheese Associations.—	
Having a capital divided into shares with limited liability	57
Without share capital, with liability limited to the assets of the Association ..	5
Dairy Produce Marketing Federation.—Having a capital divided into shares with limited liability	1
Dip Associations.—Having a capital divided into shares with limited liability	34
Egg Producers' Association.—Without share capital with liability limited to the assets of the Association	1
Farmers' Association.—With capital divided into shares with limited liability	1
Farmers' Association.—Without share capital with liability limited to the assets of the Association	1
Farmers' Distributing Association.—Having a capital divided into shares with limited liability	1
Fat Pig Selling Association.—Without share capital with liability limited to the assets of the Association	1
Flour Milling Associations.—Having a capital divided into shares with limited liability	2
Fruitgrowers' Associations.—	
Having a capital divided into shares with limited liability	8
Without share capital with liability limited to the assets of the Association ..	56
Fur Farming Association.—Having a capital divided into shares with limited liability	1
Meat and Bacon Association.—Having a capital divided into shares with limited liability	1
Packing Associations.—Having a capital divided into shares with limited liability	3
Pea Marketing Association.—Without share capital, with liability limited to the assets of the Association	1
Peanut Growers' Associations.—Having a capital divided into shares with limited liability	2
Producers' Associations.—Having a capital divided into shares with limited liability	5
Publication Association.—Having a capital divided into shares with limited liability ..	1
Stock and Produce Associations.—Having a capital divided into shares with limited liability	3
Stores Association.—Having a capital divided into shares with limited liability	1
Sugar Associations.—	
Having a capital divided into shares with limited liability	1
Without share capital with liability limited to the assets of the Association ..	8
Tobacco Growers' Associations.—	
Having a capital divided into shares with limited liability	2
Without share capital with liability limited to the assets of the Association ..	4
Associations without share capital with unlimited liability	Nil
	211

Since the Acts have been in operation, four associations have amalgamated with others and fourteen have wound up voluntarily, leaving a total of 191 associations and two federations on the register.

During the year, several associations have amended their rules to meet changing circumstances.

The number of licensed auditors has increased by eight, bringing the total to 208.

No further exemptions from the provisions of the Acts have been granted during the year, the total remaining at 28.

A. J. EVERIST,
Registrar of Primary Producers'
Co-operative Associations.

REPORT OF THE DIRECTOR OF MARKETING FOR THE YEAR ENDED 30TH JUNE, 1938.

In accordance with the provisions of *"The Primary Producers' Organisation and Marketing Acts,* 1926 *to* 1935," I have the honour to submit herewith a report of the operations of the marketing organisations that have been constituted in relation to the various commodities under the legislative measures which have been enacted to provide for the organised marketing of primary products in Queensland.

ARROWROOT BOARD.

Personnel of the Board to 14th April, 1940:—Messrs. R. Stewart (Chairman), C. Brumm, A. Rose, G. R. Walker, L. R. Oxenford, and R. Wilson (Acting Director of Marketing).

During the period under review, a firm market prevailed for arrowroot, the Board's realisations for the 1937 season's intake assuming proportions which should result in growers obtaining more encouraging financial returns than those received for the three preceding seasons, during which the operations of a section of millers, selling outside the Pool, depressed the market to an unsatisfactory level. This improvement in prices was offset, however, in the case of the 1937 crop, by a considerable reduction in yield owing to drought conditions over almost the whole of the period of that particular crop's growth. On present indications the market should remain firm during the ensuing twelve months, but it is unlikely that the growers will receive much benefit therefrom, for the reason that in respect of the 1938 crop excessive rains early in the planting season and during the growing period point to a reduction in the yield which might otherwise have been anticipated.

It is considered, however, that the supply of new season's arrowroot will be sufficient to cater for Australian requirements until the 1939 crop is available.

For some years the Board has investigated the possibilities of developing an export trade with the United Kingdom, but without success. Surveys of this market in more recent years, in channels which were likely to use arrowroot for other than edible purposes, were also discouraging. During 1937-38, however, an inquiry was received from overseas, but owing to the short crop in 1937, and the anticipated low yield ex the ensuing crop, the Board was unable to enter into any negotiations.

ATHERTON MAIZE BOARD.

Personnel of the Board to 31st March, 1939.—Messrs. J. Gargan (Chairman), L. R. Crouch, L. R. Tostevin, T. G. Adams, L. A. Favier, and R. Wilson (Acting Director of Marketing).

Nine candidates contested the election in March last for the appointment of five growers' representatives to the Board for the twelve months' term which commenced on the 1st April, 1938, the ballot resulting in favour of Messrs. Martin, Crouch, Gargan, Tostevin, and Adams. Immediately prior to the appointment of the Board, however, Mr. Martin, the retiring chairman, withdrew his name from the list of appointees on the grounds of ill-health, whereupon the Minister, by virtue of the powers conferred on him under the Primary Producers' Organisation and Marketing Acts, filled the vacancy thus created by appointing Mr. Favier, the candidate who obtained sixth place in the order of voting at the Board election.

1937-38 SEASON.

OPERATIONS OF STOCKS.

Maize Delivered—

	Tons.	Tons.	Tons.
Gross received from growers ..		26,721	
Less returns to growers ..		163	
		26,558	
Less moisture	240		
Less offal, dead grain, &c. ..	302	542	
			26,016

Maize Despatches—

	Tons.	Tons.	Tons.
Total sales (including 2,282 tons taken over by 1938-39 Pool)		26,089	
Plus offal sales		359	
		26,448	
Less estimated weight of bags	325		
Less poultry food ingredients (estimated) ..	439	764	
			25,684
Net under-run			332

Marketing.—Maize sales (including sales to growers totalled £244,331 12s. 7d. f.o.r. Atherton. This value includes the 2,282 tons carry-over which were taken over by the 1938-39 Pool. In addition to whole and crushed maize, the sales included poultry mashes, pig foods, and offal.

Advances to Growers.—Five net advance payments have been made to growers to date, the net total amounting to £7 10s. per ton on maize containing 3 per cent. dead grain. A premium ranging from 6d. to 3s. per ton was paid on maize containing less than 3 per cent. dead grain, while dockages on a sliding scale were applied to deliveries having a dead grain content in excess of 3 per cent.

Standing Crop Advances.—In accordance with past practice the Board has again made advances available to growers for harvesting expenses on account of the 1938-39 season's crop. The amount advanced under this heading up to the 31st May, 1938, was £1,778, the rate paid being £1 10s. per ton on 75 per cent. of each applicant's estimated crop.

BARLEY BOARD.

Personnel of the Board to 23rd April, 1939:—Messrs. E. Fitzgerald (Chairman), P. D. Fiechtner, junr., and R. Wilson (Acting Director of Marketing).

Prior to the expiration of the Board's term of office on the 23rd April, nominations were called for the election of growers' representatives, resulting in Messrs. Fitzgerald and Fiechtner being returned unopposed. Mr. H. Kessler, one of the retiring board members, did not nominate for re-election. Mr. Fitzgerald was reappointed Chairman.

In November, 1937, the Board appointed as its secretary, Mr. J. A. Watson, secretary of the Queensland State Wheat Board.

1935-36 Season.—This season's transactions were finalised during the period under review, the total net payments per bushel to growers being 3s. for Chevalier and 2s. 3d. for Cape malting and feed barley.

1936-37 Season.—This season was also finalised during the year just ended, the net payments to growers amounting to 3s. 9½d. per bushel on the 9,956 bushels delivered to the Board.

1937-38 Season.—Deliveries to the Board to date are as follow:—

	Bushels.	Lb.
Chevalier malting	40,999	35
Cape malting	3,745	26
Feed	13,004	34
	57,749	45

Up to the present, growers have received a first advance payment less dockages, according to quality, as follows:—

	Per bushel.	
	s.	*d.*
Chevalier malting	3	0
Cape malting	2	6
Feed	2	0

Claims for hail insurance compensation were assessed at 1,889 bushels of 36 lb., on which the growers concerned have received a first advance of 2s. per bushel. Negotiations for the sale of the intake of malting barley were brought to a successful conclusion, approximately 24,000 bushels of barley having been disposed of to Castlemaine Perkins Ltd., while approximately 20,000 bushels are being malted at "The Maltings" as the result of a contract entered into by the Board for the supply of same to the Queensland Brewery Ltd.

BROOM MILLET BOARD.

Personnel of the Board to 31st October, 1940:—Messrs. H. Zischke (Chairman), A. Sallisch, and R. Wilson (Acting Director of Marketing).

The Pool expired by effluxion of time on the 31st October, 1937, but, prior to that date, notice was given of the intention to extend the Pool for a further six years. As no petition was received from growers for a poll on the question of continuance or otherwise, the Pool was accordingly extended.

The calling of nominations for the election of two growers' representatives to hold office for a period of three years as from the 1st November, 1937, resulted in nominations being received from Messrs. Zischke, Sallisch, and the retiring Chairman, Mr. Scholl. The latter's nomination, however, did not contain the requisite number of signatures of growers who were eligible to vote, consequently, Messrs. Zischke and Sallisch were declared to be duly elected, Mr. Zischke being appointed Chairman.

1936-37 Season.—As stated in the last annual report, full control was not exercised in respect of this season owing to the small crop. It was necessary for growers, however, to send their broom millet to one of the two selling agents appointed by the Board. The total quantity received for the season was 92 tons 9 cwt. 1 qr. 20 lb., which realised £4,224 12s. 8d., or an average of £45 13s. 6d. per ton, the maximum and minimum prices obtained being £80 and £25 per ton respectively.

1937-38 Season.—As it was anticipated that this particular crop would not be a large one, the Board again decided not to exercise full control, and accordingly instructed growers to market their broom millet in a similar manner to the previous season. From the 1st November, 1937, to the date of this report, 91 tons 3 cwt. 3 qr. 20 lb. of broom millet were sold, which realised £3,852 5s., or an average of £42 5s. per ton, the selling prices ranging from £20 to £57 per ton.

BUTTER BOARD.

Personnel of the Board to 31st December, 1938:—Messrs. J. Purcell (chairman), J. McRobert, T. F. Plunkett, A. G. Muller, R. M. Hill, W. J. Sloan, and R. Wilson (Acting Director of Marketing).

Production.—Particulars showing the quantity of butter manufactured in Queensland during the year 1937-38, also sales and consignments for the same period, are contained in Appendix 1. For purposes of comparison, similar figures for the years 1925-26 to 1937-38, both inclusive, are set out in Appendix 2, which, on examination, shows that the quantity manufactured in 1937-38 exceeded that for 1936-37 by 545,000 boxes.

Consumption.—The figures shown as Queensland sales in the Appendices 1 and 2 do not represent the actual quantity of butter consumed within this State, which, in relation to 1937-38, is in accordance with the following:—

	Boxes.
Butter of Queensland manufacture as indicated in Appendix 1	525,519
Imports from other States (Border Trade Sales)	12,000
	537,519

A noticeable feature is the increasing consumption of butter in Queensland, which, based on a population of approximately 1,000,000, represents a per capita consumption of 30·1 lb.

of butter per annum. Since the inception of the Board in 1926, the Queensland consumption has been as follows:—

Year.	Consumption (inclusive of imports from other States).
1925-26	401,806
1926-27	407,698
1927-28	409,452
1928-29	410,879
1929-30	421,009
1930-31	414,244
1931-32	422,234
1932-33	449,520
1933-34	450,162
1934-35	473,067
1935-36	515,510
1936-37	535,784
1937-38	537,519

Commonwealth Equalisation of Prices.—During the period under review, the Board again co-operated to the fullest extent with the Commonwealth Dairy Produce Equalisation Committee Ltd. in the matter of price stabilisation. It is estimated that the average of the Commonwealth equalisation values returned by the company throughout the year will approximate 140s. per cwt., an average of 13s. 3d. per cwt. in excess of that for 1936-37. On this basis, and at the same time taking into consideration the expansion in production during the last twelve months, the increased returns to dairy farmers over 1936-37 should be in the vicinity of £2,420,000.

Yearly Returns to Factories.—Appendix 3 contains particulars of the values returned monthly to factories, in addition to the average value for the year. Comparative figures showing the average value returned yearly for the nine years from 1929-30 to 1937-38 are shown in Appendix 4.

Local Marketing Control.—As mentioned in the last annual report, all butter sold in pat form in Brisbane is marketed by the Board. The strictest attention has been paid to the matter of quality, butter selected by the Board for local consumption being of the highest quality only. The butter is packed under the most favourable conditions for distribution in pat form, and care is then taken to see that it is delivered first to the distributor and finally to retailers in the best possible condition. The Board goes a step further in that it maintains close contact with retailers, for the purpose of ensuring that the butter reaches consumers in good condition for table use. Widespread satisfaction is being expressed in relation to the quality of the butter offered for sale on the metropolitan market.

From the inception of the plan up to the 30th June, 1938, the scheme has been responsible for enhancing the returns to dairy farmers over those twenty months to the extent of £75,278 8s. 11d. During the year 1937-38 £45,569 15s. 11d. were distributed to factories by the Board, whilst for the twenty months referred to above, the total distribution to factories was £61,569 15s. 11d.; the balance, £13,708 13s., has been allocated for distribution to factories at an early date.

APPENDIX 1.

(*a*) Statement Showing (in Boxes of 56 lb.) Total Manufacture, Sales, and Consignments of Queensland Butter, July, 1937, to June, 1938.

Month.	Manufacture.	Sales.					Total Overseas Exports.
		Queensland.	Interstate.	East and Tinners.	Overseas S/Stores and other Countries.	Great Britain.	
1937.							
July	102,911	46,943	18,804	3,373	505	51,934	55,812
August	96,198	45,165	11,886	1,455	541	38,429	40,425
September ..	101,730	44,087	7,030	2,304	370	43,942	46,616
October	104,252	44,426	1,782	2,599	307	51,408	54,314
November ..	164,192	43,665	112	2,994	366	90,687	94,047
December	222,875	41,049	..	3,631	288	154,112	158,031
1938.							
January	238,225	38,802	..	3,226	344	183,731	187,301
February	253,029	40,133	..	4,097	473	205,101	209,671
March	211,128	43,721	150	6,532	299	184,185	191,016
April	209,123	43,672	11,617	7,384	570	125,612	133,566
May	180,702	46,716	42,584	4,052	567	110,313	114,932
June	168,179	47,140	14,511	7,284	708	105,358	113,350
	2,052,544	525,519	108,476	48,931	5,338	1,344,812	1,399,081

APPENDIX 2.

Comparison of Manufacture, Sales, and Consignments of Queensland Butter for Years 1925-26 to 1937-38.

Year.	Manufacture.	Sales.					Total Overseas Exports.
		Queensland.	Interstate.	East and Tinners.	Overseas S/Stores and Other Countries.	Great Britain.	
	Boxes.*	Boxes.	Boxes.	Boxes.	Boxes.	Boxes.	Boxes.
1925–26	1,074,789	399,624	51,360	19,405	2,214	608,334	629,953
1926–27	875,552	389,698	69,411	19,807	6,684	392,611	419,102
1927–28	1,240,125	376,626	60,893	35,222	4,878	764,539	804,639
1928–29	1,320,871	400,414	110,795	32,838	4,414	765,897	803,149
1929–30	1,358,954	420,389	84,712	33,503	4,284	805,951	843,738
1930–31	1,658,689	393,643	36,983	30,887	3,285	1,200,691	1,234,863
1931–32	1,697,445	399,785	7,075	41,286	2,145	1,243,950	1,287,381
1932–33	1,785,523	427,920	7,333	53,544	3,212	1,295,035	1,351,791
1933–34	2,212,707	425,566	9,139	68,430	4,191	1,692,142	1,764,763
1934–35	2,325,402	463,567	47,794	78,727	4,572	1,743,040	1,826,339
1935–36	2,008,784	505,510	104,140	70,227	4,399	1,327,371	1,401,997
1936–37	1,507,544	516,546	51,699	30,235	2,855	882,983	916,073
1937–38 (*a*) ..	2,052,544	525,519	108,476	48,931	5,338	1,344,812	1,399,081

* Capacity 56 lb.

(*a*) Subject to revision.

APPENDIX 3.

COMPARISON OF NET PRICES RETURNED TO FACTORIES ON BASIS OF EQUALISATION FIGURES, YEARS 1930-31 TO 1937-38.

Month.	Quantity Sold (Boxes).*	Total Net Value.	Net Value per Box.	Net Value per lb. (Approximate).	Quantity Sold (Boxes).	Total Net Value.	Net Value per Box.	Net Value per lb. (Approximate).
	1930-1931.				1931-1932.			
		£ s. d.	£	s. d.		£ s. d.	£	s. d.
July	89,469	361,589 18 3	4·0415106	1 5⅓	106,852	365,276 13 3	3·4185291	1 2⅝
August	97,190	362,818 16 1	3·7330878	1 4	116,584	406,126 9 10	3·4835526	1 3
September ..	112,044	378,332 8 4	3·3766415	1 2½	105,468	350,417 12 5	3·3225019	1 2¼
October ..	124,975	426,612 10 2	3·4135829	1 2⅝	132,346	416,485 11 2	3·1469449	1 1½
November ..	139,678	469,539 15 6	3·3615873	1 2⅖	120,478	373,499 15 1	3·1001491	1 1²⁄₇
December ..	152,655	533,044 9 10	3·4918247	1 3	189,338	573,669 7 7	3·0298693	1 1
January ..	130,707	463,628 13 10	3·5470839	1 3⅕	209,949	630,772 5 1	3·0044071	1 0⁶⁄₇
February ..	161,191	562,841 10 1	3·4917676	1 3	174,058	514,191 18 5	2·9541413	1 0⅝
March	215,864	755,030 15 9	3·4977152	1 3	140,891	401,619 9 0	2·8505686	1 0¼
April	148,112	501,965 10 8	3·3890943	1 2½	116,090	348,214 9 8	2·9995218	1 0⁶⁄₇
May	163,794	546,296 9 0	3·3352654	1 2²⁄₇	158,787	483,052 15 3	3·042143	1 1
June	129,810	436,702 12 10	3·364168	1 2³⁄₇	123,400	376,588 17 4	3·0517736	1 1
	1,665,489	£5,798,403 10 4	3·4815022	1 3	1,694,241	£5,239,915 4 1	3·0927804	1 1¼
	1932-1933.				1933-1934.			
July	115,103	364,643 16 0	3·1679781	1 1⁴⁄₇	82,151	243,728 8 5	2·9668345	1 0⁵⁄₇
August	98,066	302,213 5 6	3·0817335	1 1¼	89,666	252,552 3 9	2·816588	1 0
September ..	91,846	266,665 3 6	2·9033945	1 0½	103,987	267,211 10 8	2·569663	0 11
October ..	111,271	299,637 16 0	2·6928651	0 11½	154,016	339,864 14 7	2·2066846	0 9³⁄₇
November ..	158,661	387,965 0 0	2·4452448	0 10½	214,133	421,993 0 3	1·9707052	0 8³⁄₇
December ..	149,088	343,180 2 10	2·301863	0 9⁶⁄₇	256,218	513,807 10 0	2·0053529	0 8⁴⁄₇
January ..	156,857	346,020 2 6	2·2059592	0 9½	238,523	502,844 0 5	2·1081574	0 9
February ..	237,577	481,251 0 0	2·0256633	0 8⅝	215,022	448,691 19 0	2·0867258	0 9
March	248,744	562,481 13 10	2·2612875	0 9⁵⁄₇	261,770	572,046 19 5	2·1853038	0 9⅜
April	169,206	390,264 19 0	2·3064487	0 9⅞	204,270	432,788 1 6	2·118706	0 9
May	152,716	370,992 13 0	2·4292979	0 10³⁄₇	247,160	669,759 4 8	2·7098205	0 11⁴⁄₇
June	97,909	271,576 1 4	2·77376	0 11⅞	132,552	364,783 16 1	2·7520053	0 11⅘
	1,787,044	£4,386,891 13 6	2·4548314	0 10½	2,199,468	£5,030,071 8 9	2·2869492	0 9⁹⁄₁₁
	1934-1935.				1935-1936.			
July	122,086	358,646 19 0	2·9376583	1 0⁴⁄₇	95,244	319,259 18 6	3·35202139	1 2⅜
August	114,423	331,217 10 2	2·894676	1 0³⁄₇	85,046	291,183 18 9	3·42384046	1 2⁵⁄₇
September ..	140,888	373,434 4 10	2·6505753	0 11⅜	104,672	335,729 18 0	3·20744711	1 1¾
October ..	200,429	484,937 13 5	2·41949856	0 10⅜	162,154	464,725 8 11	2·8659512	1 0¼
November ..	211,616	537,835 10 5	2·54156361	0 10⅞	196,358	559,422 7 3	2·84899202	1 0¼
December ..	274,204	703,781 1 9	2·5666332	0 11	183,322	518,476 12 9	2·82822926	1 0⅛
January ..	331,547	764,243 6 2	2·30508289	0 9⅞	244,954	658,816 9 7	2·68955188	0 11½
February ..	275,915	662,799 14 0	2·40218801	0 10²⁄₇	267,215	750,106 18 6	2·80712885	1 0
March	255,294	661,510 8 9	2·59117114	0 11⅛	224,094	695,001 4 7	3·10138263	1 1¼
April	177,808	510,326 5 0	2·87009729	1 0²⁄₇	195,284	650,826 8 5	3·33271763	1 2²⁄₇
May	136,989	426,033 10 0	3·10998338	1 1⅓	134,008	454,764 13 9	3·3935637	1 2½
June	96,501	318,569 17 8	3·3012081	1 2⅐	119,296	404,399 19 4	3·38988717	1 2½
	2,337,700	£6,133,336 1 2	2·6236626	0 11¼	2,011,647	£6,102,713 18 4	3·03369021	1 1
	1936-1937.				1937-1938.			
July	82,941	282,161 18 9	3·4019596	1 2⁴⁄₇	121,559	444,921 4 11	3·660125947	1 3¹¹⁄₁₆
August	107 108	348,645 8 6	3·25508298	1 2	97,476	362,786 3 10	3·72180016	1 3¹⁵⁄₁₆
September ..	104,955	340,015 12 0	3·23963221	1 1⅞	97,733	363,610 8 0	3·72044652	1 3¹⁵⁄₁₆
October ..	107,606	336,545 12 6	3·12757309	1 1³⁄₇	100,522	340,464 18 3	3·386969221	1 2½
November ..	76,167	226,300 2 9	2·97110477	1 0¾	137,824	455,544 18 4	3·30526561	1 2⅙
December ..	80,375	231,967 17 1	2·88606971	1 0⅜	199,080	660,000 12 10	3·3152534	1 2¼
January ..	139,228	419,196 12 3	3·01086432	1 0⅞	226,103	777,544 12 0	3·438895554	1 2¾
February ..	135,723	425,779 14 0	3·13712268	1 1³⁄₇	249,804	899,704 15 5	3·60164281	1 3³⁄₇
March	165,874	535,556 16 6	3·22869676	1 1⅞	234,887	832,857 1 7	3·54577776	1 3⅕
April	194,213	636,509 10 0	3·27737851	1 2	188,855	672,251 3 0	3·55961539	1 3¼
May	155,954	530,136 16 3	3·3993153	1 2⁴⁄₇	204,232	734,777 9 10	3·59775891	1 3³⁄₇
June	134,174	461,433 2 4	3·4390651	1 2¾	175,001	648,048 6 1	3·703112	1 3⅞
	1,484,318	£4,774,249 2 11	3·2164598	1 1¹¹⁄₁₄	2,033,076	£7,192,511 14 1	3·53774857	1 3⅙

NOTE.—As final London figures for April, May, and June, 1938, are not yet to hand, the particulars in respect of these months are estimates only.

* The capacity of a butter box is 56 lb.

APPENDIX 4.

COMPARISON OF NET PRICES RETURNED TO FACTORIES ON BASIS OF EQUALISATION FIGURES—YEARS 1929–30 TO 1937–38.

Year.	Quantity Sold.	Total Net Value.	Net Value per Box.	Net Value per lb. (Approx.)
	*Boxes.	£ s. d.	£	s. d.
1929–30	1,348,839	5,508,777 14 3	4·0840885	1 5½
1930–31	1,665,489	5,798,403 10 4	3·4815022	1 3
1931–32	1,694,241	5,239,915 4 1	3·0927804	1 1¼
1932–33	1,787,044	4,386,891 13 6	2·4548314	0 10½
1933–34	2,199,468	5,030,071 8 9	2·2869492	0 9⁹⁄₁₁
1934–35	2,337,700	6,133,336 1 2	2·6236626	0 11¼
1935–36	2,011,647	6,102,713 18 4	3·03369021	1 1
1936–37	1,484,318	4,774,249 2 11	3·2164598	1 1¹¹⁄₁₄
1937–38 (*a*)	2,033,076	7,192,511 14 1	3·53774857	1 3⅙

* Capacity 56 lb. (*a*) Subject to revision.

CANARY SEED BOARD.

Personnel of the Board to 31st May, 1939:—Messrs. E. A. Thomas (Chairman), W. A. Ross, and R. Wilson (Acting Director of Marketing).

Three nominations were received for the election of the growers' representatives to the Board for the twelve months' term which commenced on the 1st June, 1938. A ballot was, therefore, necessary, resulting in the defeat of one of the retiring Board members in the person of Mr. G. D. O'Neill. Mr. Thomas was appointed Chairman following the recommendation of the new Board at its first meeting.

1936-37 Season.—Net payments to growers for this season which has been finalised amounted to £34 16s. 3d. per ton for cleaned seed.

1937-38 Season.—The latter half of the year 1937 saw a change in the policy of the Board. For some years, up to and including the 1936-37 season, the arrangements for the marketing of canary seed were carried out on the Board's behalf by a Brisbane firm who acted in the capacity of selling agents and to whom growers were required to deliver their crops. In respect of the 1937-38 season, the agents' intimation that they did not desire reappointment as such coincided with the Board's decision to locate its headquarters in Toowoomba and thus administer its affairs in the centre of the main canary seed-producing areas. The State Wheat Board accepted the appointment as agents, its Secretary, Mr. J. A. Watson, being appointed Secretary of the Canary Seed Board. Negotiations were also successfully concluded with the State Wheat Board for the use of portion of "The Maltings" at Toowoomba for receiving and cleaning the 1937-38 season's deliveries from growers, for which purpose up-to-date treatment plant is to be installed. The necessary financial assistance was obtained from the Rural Credits Branch of the Commonwealth Bank of Australia, which to date has made available a first advance of £15 per ton, on a cleaned seed basis, to growers delivering to the Pool.

That the Board is now receiving greater support from growers is indicated by the volume of the 1937-38 intake, which to date exceeds the previous season's deliveries by some hundreds of tons. Although the drought conditions during 1936-37 were partly responsible for the considerable shrinkage of the Board's receivals in that season compared with previous years, an important contributing factor was the action of a section of growers who, by virtue of their freedom to do so under section 92 of the Commonwealth Constitution, disposed of a considerable quantity of canary seed direct to interstate buyers for consumption in the principal market, namely, the Southern States. It is hoped that this renewed confidence in the Pool will increase during the ensuing twelve months, for it is only by the full co-operation of growers that the Board can function efficiently in their interests and continue to be the stabilising medium which, together with the tariff protection afforded the industry up to the present time, has provided the producers with a more commensurate return for their labours than would be obtainable if the orderly system of marketing did not apply to canary seed. Furthermore, the services performed by the growers' marketing organisation on their behalf, and the continual attention given to the general welfare of the industry, provide sufficient indication for the observation that without doubt the economic lot of the producers can be improved to a greater extent under this type of organisation than by their individual efforts. As an instance of this, the present Tariff Board inquiry into the duty on canary seed is receiving the close attention of the Canary Seed Board, which has been responsible for evidence being submitted in collaboration with the canary seed growers' organisations in Victoria and South Australia. The result of the inquiry will not be known for some time, as the Tariff Board's hearings have not yet been concluded.

CHEESE BOARD.

Personnel of the Board to 31st December, 1938:—Messrs. D. G. O'Shea (Chairman), R. C. Duncan, T. Dare, and R. Wilson (Acting Director of Marketing).

Production.—Following on the low production of the two previous years, it is pleasing to be able to record a production figure for 1937-38 approaching normal levels, and as the new season has commenced exceptionally well there is every reason for optimism in regard to output.

As will be observed from the statement of monthly production figures for the past four years set out hereunder, the total production for the year under review was 11,947,771 lb., as against 7,764,930 lb. for the previous year, an increase of 4,182,841 lb. This represents an increase of approximately 54 per cent. on the 1936-37 production, but, of course, in that year drought conditions prevailed and the quantity of cheese manufactured declined to the lowest level on record.

Month.	1934-35.	1935-36.	1936-87.	1937-38.
	Lb.	Lb.	Lb.	Lb.
July	886,429	544,044	403,313	755,244
August	982,110	667,923	611,320	773,098
September	1,166,342	699,044	733,945	828,660
October	1,271,157	953,302	681,579	860,735
November	1,223,538	976,544	409,145	1,036,818
December	1,422,997	958,039	372,821	1,216,821
January	1,505,254	1,116,396	837,685	1,219,540
February	1,161,974	979,726	759,169	1,273,327
March	987,669	874,613	707,019	1,111,410
April	624,405	625,034	845,145	994,474
May	484,147	419,142	740,660	879,321
June	461,519	327,107	663,129	998,323
	12,177,541 or 5,436 tons	9,140,914 or 4,081 tons	7,764,930 or 3,466 tons	11,947,771 or 5,334 tons

As in past years, cheddar cheese constituted the bulk of the factories' output, although the quantities of Gruyere and Roman cheese produced during the past year showed an increase.

The following statement shows the quantities of the different varieties manufactured during the past three years:—

Variety.	1935-36.	1936-37.	1937-38.
	Lb.	Lb.	Lb.
Cheddar	9,024,157	7,678,849	11,801,893
Gruyere	57,784	40,309	76,225
Roman	58,973	45,772	69,653
	9,140,914	7,764,930	11,947,771

Production in other States.—By courtesy of the Commonwealth Dairy Produce Equalisation Committee Ltd., the quantities of cheese manufactured in the States of Queensland, New South Wales, Victoria, South Australia, and Tasmania each year since the commencement of Commonwealth equalisations are set out hereunder:—

State.	1934-35.	1935-36.	1936-37.	1937-38.
	Lb.	Lb.	Lb.	Lb.
Queensland	12,177,541	9,140,914	7,764,930	11,947,771
New South Wales	8,420,653	7,055,933	7,269,514	7,582,866
Victoria	10,390,648	11,710,841	14,529,416	17,773,450
South Australia	5,416,919	8,048,440	12,243,272	15,471,831
Tasmania	731,168	628,093	917,581	1,267,620
Totals	37,136,929	36,584,221	42,724,713	54,043,538

A perusal of the above statement reveals the rapid progress made in cheese production over the past few years in Victoria and South Australia, and to a lesser extent in Tasmania, whilst the States of Queensland and New South Wales have remained more or less at a standstill, with slight decreases over the drought years.

Another feature of the statement is that the total production by all States during the year just closed, 54,043,538 lb., constitutes a record for cheese production in this country.

In view of the increase in cheese production in the Southern States, where the opportunities for the supply of cream are more or less on a par with Queensland, it is difficult to understand why cheese factories in our own State have not made any material progress in regard to output. As already mentioned, however, the prospects for the future appear to be brighter than for some years past.

Quality.—In the last annual report reference was made to the slight improvement in the export grading figures for 1936-37. Expectations that the standard of quality would be further improved during the year 1937-38 have not been realised, as at best the gradings have been only about on a par with those of the two previous years, as will be noted from the following statement of export gradings:—

Grade.	1935–36.		1936-37.		1937-38.	
	Crates.	Per Cent.	Crates.	Per Cent.	Crates.	Per Cent.
Choicest	366	1·41	29	·21	462	1·13
Firsts	7,615	29·24	5,477	39·37	14,608	35·60
Seconds	16,413	63·02	8,021	57·65	25,151	61·29
Thirds	1,465	5·62	349	2·51	717	1·75
Rejects	184	·71	37	·26	95	·23
Totals	26,043	100·00	13,913	100·00	41,033	100·00

Assuming that 80 per cent. of the Queensland cheese sold within Australia were of choice or first-grade quality, and the balance second-grade, the figures for the whole output over the past two years would have been as follows:—

Grade.	1936-37.		1937-38.	
	Lb.	Per Cent.	Lb.	Per Cent.
Choicest and Firsts	4,889,474	69·45	6,183,103	56·26
Seconds	2,100,032	29·83	4,687,129	42·65
Thirds and Rejects	50,908	·72	119,366	1·09
Totals	7,040,414	100·00	10,989,598	100·00

Disposals and Values.—Hereunder is a statement of the disposals of Queensland cheese on the various markets during the past three years:—

Market.	1935-36.		1936-37.		1937-38.	
	Lb.	Per Cent.	Lb.	Per Cent	Lb.	Per Cent.
Local	3,808,726	43·0	3,450,637	49·0	3,150,602	28·7
Process	1,451,580	16·4	1,751,932	24·9	1,810,395	16·5
Overseas	3,599,297	40·6	1,837,845	26·1	6,028,601	54·8
Totals	8,859,603	100·0	7,040,414	100·0	10,989,598	100·0

The process figure for the year 1935-36 represents only ten months' transactions, as prior to September, 1935, sales to processors were made at the local price and included in the local sales.

The average equalisation price on all sales for the year just closed worked out at 8·32d. per lb., as against 8·23d. per lb. for the previous year, and 7·81d. per lb. for 1935-36, and on these average prices the value of Queensland's total output for the three years was as under:—

	£	s.	d.
1935-36	288,306	5	0
1936-37	241,427	10	8
1937-38	380,972	14	8

Based on Commonwealth figures, the average equalisation values per pound on the various markets for these three years worked out as under:—

Market.	1935-36.	1936-37.	1937-38.
	d.	d.	d.
Local	9·42	9·41	9·98
Process	8·19	8·43	8·75
Overseas	5·49	6·49	7·20

Interim figures have, of course, been used in arriving at equalisation values for the months of May and June of 1938, as at time of writing this report final values have not been determined, but it is not expected that the values given will be altered materially.

The average price and gross values realised for the cheese output must again give general satisfaction to those engaged in the industry; and whilst the maintenance of higher values oversea had an appreciable effect in this direction, nevertheless the higher local values, together with the stabilised condition of the Australian market, again demonstrated the immense value of the Commonwealth Equalisation Scheme in the orderly marketing structure.

As has been the case ever since Commonwealth equalisations began, on the 1st July, 1934, there has been an almost complete absence of local price fluctuations, and for practically the whole of the past twelve months a local price of 10d. per lb. for medium cheese and a price of 8¾d. per lb. for cheese sold to processors was maintained. At the time of writing these prices have been increased to 10½d. and 9d. per lb. respectively.

As already mentioned, the realisations on the export market were better during the past twelve months than for some years, and hereunder are set out the spot prices assumed to have been realised for equalisation purposes by each month's shipments of Queensland cheese to the United Kingdom market during 1936-37 and 1937-38:—

Month.	Realisation Per Cwt. 1936/37.		Realisation Per Cwt. 1937/38.	
	s.	d.	s.	d.
July	65	6	66	11
August	65	6	69	11
September	69	3	63	7
October	57	0	63	9
November	52	3	66	11
December	50	2	66	0
January	67	5	68	7
February	68	6	68	0
March	69	9	69	3
April	70	2	66	9
May	71	6	67	8
June	68	8	65	0 (estd.)

Fortunately, as a result of improved seasonal conditions during 1937-38, Queensland cheese factories were able to take advantage of the higher values realised overseas to a far greater extent than in the previous year, for during the past twelve months a total of 37,787 crates of cheese were exported to the United Kingdom, as against 10,462 crates in 1936-37. For comparative purposes it might be stated here that the exports in 1935-36 constituted 22,337 crates, whilst in 1934-35 shipments aggregated 50,312 crates.

Consumption of Cheese within Australia.—Following on the slight increase in the per capita consumption of cheese in Australia, as revealed by the 1936-37 figures, expectations were entertained that the per capita consumption figure for the year just closed would have been in the vicinity of 4½ lb., but unfortunately, instead of improving during the year, the position became definitely worse, and the low per capita consumption of cheese within the Commonwealth is now causing those engaged in the industry a considerable amount of concern.

Although the position in Queensland is a little more satisfactory than in one or two of the Southern States, there has, nevertheless, been a decrease in this State for which it is difficult to account, but there can be no doubt that, in order to rectify the position, greater attention will have to be given to our quality and the age at which cheese is made available to the consuming public.

Commonwealth Equalisations.—The Board again desires to place on record its appreciation of the Commonwealth Dairy Produce Equalisation Plan, which has functioned so successfully throughout the past year, and cheese manufacturers in this State are to be commended for the manner in which they have supported the committee administering the scheme.

Board Expenses.—Precepts amounted to £325 to the Council of Agriculture and £221 10s. on account Dairy Cattle Improvement Act, a total of £546 10s., equal to 1·1d. per 100 lb. of cheese manufactured, as against 1·7d. in the previous year. The Board's working expenses proper, amounting to £473 17s. 11d., worked out at ·96d. for the year, as against 1·52d. per 100 lb. of cheese of 1936-37 manufacture.

COTTON BOARD.

Personnel of the Board to 31st December, 1940:—Messrs. H. R. Brake (Chairman), E. Schuenemann, J. W. Fleming, E. J. Basson, H. F. Lindenmayer, F. A. Kajewski, and R. Wilson (Acting Director of Marketing).

The Board election in December, 1937, resulted in Messrs. Basson, Lindenmayer, and Kajewski being returned unopposed, while Messrs. Brake and Schuenemann secured a majority over the candidate opposed to each in their respective districts. Mr. Fleming defeated Mr. McRae, the retiring Board member for District No. 3.

1936-37 Season.—The drought conditions which prevailed during 1936-37 were reflected in the low yield from this season's crop. Sufficient seed to plant 56,900 acres was distributed by the Board, but it estimated that only 50,000 acres were harvested, the total yield amounting to 11,792,828 lb. of seed cotton, yielding 4,113,684 lb., from which 8,519 bales of raw cotton were turned out at the ginneries. The whole of the crop was sold to Australian spinners and manufacturers, the grade and quality being of a high standard.

The cotton-seed oil mill at Whinstanes ginnery continues to be a valuable adjunct to the Board's activities. The Board was able to dispose of the whole of its oil output within the Commonwealth and satisfy requirements, but, in respect to cotton-seed meal, the 4,020 short tons sold were insufficient to meet the demand, which increased considerably during the drought.

Four advance payments at the following rates have been paid to date to growers for seed cotton delivered by them during the season:—

	Average for all classifications of Hand-picked and Snapped Cotton Per lb. Raw Cotton.
	d.
First Advance Payment ..	8·366
Second Advance Payment ..	1·2
Third Advance Payment ..	1·107
Fourth Advance Payment ..	0·4
	11·073

The Board has decided to make a final payment in July of ·301d. per lb., less ·17d. per lb., which will be placed to the credit of the Working Account Reserve Fund.

The Board has also paid growers £4 per ton for the cotton seed contained in their seed cotton. In accordance with the provisions of *The Raw Cotton Bounty Act of* 1934, the rate of bounty, which was reduced by ½d. per lb. in 1936, was further reduced by a similar amount in 1937. The first advance payment, above referred to, included Commonwealth bounty at the rate of 4¼d. per lb. of raw cotton, less the reduction of 20. per cent. imposed by the Commonwealth *Financial Emergency Act of* 1931.

In October, 1937, the Board paid from its Reserve Fund to the growers concerned the sum of £14,348 16s. 4d., representing levies collected from them in the 1928 and the 1930 seasons and undistributed surpluses which had accumulated from the 1927, 1928, and 1929 seasons.

1938 Crop.—Good planting rains during October and November, 1937, followed by further falls in the middle of December, augured well for the success of the 1938 cotton crop, the area under cultivation being estimated at 68,000 acres. From January to March, however, extreme variations in climatic conditions were experienced over the whole cotton areas, scattered rains being interspersed with dry conditions and very hot weather, which, with heavy precipitations in some instances, seriously reduced yields. Picking operations commenced early in March, and from then until the mid-May rains favourable conditions prevailed for the obtaining of good grades. Unfortunately, heavy rainfall occurred in the latter part of May, which was followed by showery cloudy weather, unaccompanied by frost, until the end of June. Excellent top crops developed in many districts, but, owing to the lack of cold bright weather, the maturing of the bolls was seriously retarded. The grade of the cotton that opened was appreciably lowered by the climatic conditions. Killing frosts were urgently required at the end of June to hasten the opening of the crop in order that harvesting operations could be completed to allow for the timely preparation of the seed-beds for the coming season. It is estimated that the yield will not exceed 11,000 bales.

Deliveries from growers up to and including 30th June amount to 11,194,637 lb. seed cotton, from which 7,786 bales of raw cotton were ginned, the actual yield of raw cotton being 3,841,428 lb.

The continued expansion of the cotton-spinning and weaving industries in Australia furnishes an excellent opportunity to increase the production of raw cotton in Queensland, and, in fact, makes it incumbent on growers to do so in order that the Commonwealth requirements may be satisfied. Efforts have been made in this direction by producers, but the failure to reach this objective in the last two years may be attributed to the drought conditions during 1936 and 1937. The Board continues to advocate increased production, the results of its endeavours in respect to the 1937 crop being an increased acreage, particularly in the South Burnett and Maranoa districts, while, in relation to the current season, the area planted (68,000 acres) has only been exceeded on one occasion since the inception of the Board in 1926.

The Commonwealth Government announced in February last that a decision had been made to restore the 20 per cent. reduction that had been applied for financial emergency reasons to the bounty on the production of raw cotton. The necessary amending legislation has been passed, and consequently full bounty rates as prescribed in the Raw Cotton Bounty Act will be paid on all raw cotton produced from the 1938 and 1939 crops.

EGG BOARD.

Personnel of the Board to 31st December, 1938:—Messrs. T. Hallick (Chairman), A. C. M. Smith, F. S. Morrison, J. De Vries, O. A. W. Evans, and R. Wilson (Acting Director of Marketing).

At the Board election in December, three of the retiring Board members were defeated by the candidate opposed to each in their respective districts, Messrs. Hallick and De Vries being the only members of the Board who were re-elected.

Supplies.—For the twelve months ended 25th June, 1938, supplies to the Board and its authorised agents were 8.3 per cent. less than those received during the previous year.

Sales.—Sales of eggs in shell and egg pulp for the period under review continued to show an increase over the year 1936-37, whilst the quantity of eggs despatched to Southern markets declined further.

Export.—The packing of eggs for export commenced on 2nd August, and the last shipment was despatched on the 1st December, 1937. Shipments were made to London, Liverpool, Manchester, and Glasgow, the packs used being 13½, 15, 16, 17, and 18 lb. per long hundred. The total quantity shipped was 1,234,380 dozen, a decrease of 34½ per cent., in comparison with the previous season, when 1,888,650 dozen were exported. Queensland was not singular in this respect, as there was a marked decline in egg exports from every State, the aggregate figures for the Commonwealth showing a decrease of 33 per cent. Favourable reports were received with regard to the Board's consignments of eggs throughout the season. It is interesting to record, under this heading, the comments of the Commonwealth Dairy Officer, London, on the first shipment of the season by the "Narkunda"—

> "Quality of eggs very good, grading, packing and condition very good. The eggs are arriving in really excellent condition, the cases are a good, regular lot, timber is well dressed, and the attractive brands on ends of cases makes this one of the most attractive packages (if not the best) coming into London from any country."

In the last annual report it was stated that owing to the very serious slump in prices towards the end of the 1936 export season the Board was faced with heavy reclamations. In 1937, however, the market was firm throughout the season, and on completion of the accounts there was a credit balance of £8,186 2s. 3d. In the season 1936 the average gross realisations, London, were 10s. 8.4d. per long hundred (10 dozen eggs), while those for 1937 were 12s. 10.8d.

Representations were made on several occasions to the Commonwealth Government for financial assistance in connection with the exportation of eggs, and, as a result of a deputation by representatives of the Egg Producers' Council, which waited on the Acting Minister for Commerce in May last, advice subsequently was received that the Federal Cabinet had decided to defer consideration of the matter until results of the current export season were known.

In co-operation with the Egg Producers' Council, the Council for Scientific and Industrial Research, the Department of Commerce, and this Department, the Board was again actively engaged during the year in experimental work, both in the United Kingdom, and also in Australia, as a result of which, much informative and helpful data have been compiled. A programme, very extensive in its scope, has been prepared for the current season, and it is anticipated that beneficial results will emerge from the investigations.

In this connection, the Board made a further grant of £100 during the year for the purpose of assisting in research work in connection with poultry at the Animal Health Station, Yeerongpilly.

A summary of the major marketing operations of the Board is set out hereunder:—

JULY, 1937–JUNE, 1938.

——	Dozen.	By comparison with 1936–37.	
		Increase.	Decrease.
		Per cent.	Per cent.
Quantity of eggs received at packing floors of the Board	3,252,582	..	8·3
Quantity of eggs received by Board's authorised agents	1,277,264		
Surplus stocks transferred by agents to Board's floor	351,617	..	43·35
Eggs cold-stored	214,770	11·21	..
Eggs converted into pulp	218,279	5·34	..
Eggs exported overseas	1,234,380	..	34·64
Eggs sent to Southern markets	364,650	..	12·99

THE FRUIT INDUSTRY.

The Committee of Direction, which is the executive committee of the organisation, is formed by the election of representatives from the five sectional group committees, and a Government representative. The personnel of the Committee (with the sectional group represented, shown in parentheses) to 31st August, 1939, is as follows:—Messrs. P. J. Savage, Chairman (Other Fruits); M. Buchanan (Banana); J. B. Ferris (Deciduous); J. H. Kidd (Other Fruits); C. H. W. Owen (Pineapple); C. Stobert (Pineapple); L. G. Swain (Citrus); and R. Wilson (Acting Director of Marketing).

INTERSTATE TRANSPORT.

The consignments of fruit and vegetables forwarded by Committee of Direction fruit train specials and by steamer to the Southern markets for the twelve months ended 30th June, 1938, were as follows :—

——	By C.O.D. Fruit Train Specials.	By Steamer.	Total.
	Packages.	Packages.	Packages.
To—			
Victoria	242,765	1,106	243,871
New South Wales	836,210	1,949	838,159
Total	1,078,975	3,055	1,082,030

QUEENSLAND BANANA AND PINEAPPLE TRANSACTIONS FOR TWELVE MONTHS ENDED 30TH JUNE, 1938.

Bananas.

Southern Consignments—		
By C.O.D. Fruit Trains to—	1½ bushel cases.	
Melbourne	47,361	
Sydney	99,315	
Other Centres	11,118	
	157,794	
By New South Wales Fruit Trains, *via* Murwillumbah (estimated)	30,000	
Total Interstate Consignments		187,794
Queensland Sales—		
Brisbane—		
Cases	81,244	
Bunches, 352,306 equivalent to	93,948	
	175,192	
Cases handled direct by various Brisbane merchants (approximately)	55,400	
	230,592	
Queensland country sales (estimated)	80,000	310,592
Total Queensland Production (approximately)		498,386

Pineapples.

Southern Consignments—		
By C.O.D. Fruit Trains to—	1½ bushel cases.	
Melbourne	118,521	
Sydney	178,347	
Other Towns in Southern States	10,830	
Total Interstate Consignments		307,698
Queensland Sales (approximately)		208,576
Factory Consignments—		
Winter Pack, 1937	116,440	
Summer Pack, 1938	357,023	473,463
Total Queensland Production (approximately)		989,737

FACTORY ACTIVITIES FOR TWELVE MONTHS ENDED 30TH JUNE, 1938.

The following quantities of the various fruits have been handled for factory:—

STANTHORPE FRUITS.

Season—November to May—

	Direct from Growers. Tons.	Ex Market. Tons.	Tons.
Apples	156	6	
Plums	355	32	
Quinces	¼	—	
Tomatoes	13	9	
	524¼	47	= 571¼

CITRUS FRUITS.

Season—April to October—

	Direct. Tons.	Ex Market. Tons.	
Citrons	9	..	
Sevilles	62	..	
Lisbon Lemons	109	..	
Bush Lemons	1	..	
Grape Fruit	5	..	
Sweet Oranges	47	9½	
	233	9½	= 242½

FIGS.

Season—January to March	68

PAPAWS.

Season—June to January—

	Direct. Tons.	Ex Market. Tons.	
By weight—			
Ripe	23½	103	
Green	45½	..	
Cases	28½	..	
	97½	103	= 200½

PASSION FRUIT.

Season—
November to January;
May to August—

Direct. Tons.	Ex Market. Tons.	
85	47	= 132

STRAWBERRIES.

Season—June to December	154

TOMATOES.

Season—October to December—

Direct	99	..	
Ex Markets	46	..	= 145

PINEAPPLES.

	Direct.	Ex Market.	
	1½ bushel cases		
Winter Crop, 1937	116,440	18,477	
Summer Crop, 1938	357,023	19,276	
	473,463	37,753	
	= 511,216 cases.		
* A case contains 56 lb. of pineapple = 40 cases to the ton			12,780
Total tonnage			14,293¼

DIRECTIONS AND LEVIES.

Directions.

The following fruits have been under the control of the Committee of Direction for the year ended 30th June, 1938, by direction:—

- Citrus fruits, for factory purposes;
- Deciduous fruits, for factory purposes;
- Figs, for factory purposes;
- Passion fruit, for factory purposes;
- Papaws—
  - (*a*) For factory purposes;
  - (*b*) For the purpose of prohibiting the sale of green papaws on the Brisbane market, and to prohibit the sale of blemished papaws when the price of unblemished fell to 3s. per case.
- Pineapples, for factory purposes;
- Strawberries, for factory purposes;
- Tomatoes—
  - (*a*) For factory purposes;
  - (*b*) To stabilise the Brisbane market for Stanthorpe-grown tomatoes by prohibiting the sale of "B" grade and small "A" grade tomatoes from that district in the event of the price of "A" grade not realising a higher gross amount than 4s. 6d. per half-bushel case.

Levies.

The following levies have been in operation during the year ended 30th June, 1938:—

Banana levy—1d. for every £1 or part thereof of the gross proceeds realised from sales in Queensland of bunch bananas, and ½d. per 1½-bushel case of bananas.

Citrus levy—1d. per bushel case or ½d. per half-bushel case; for expenditure in the interests of the citrus section.

Pineapple levy—½d. per case on pineapples marketed as fresh fruit, and 1d. per case on factory pineapples, to meet the administrative services of the pineapple section.

Stanthorpe levy—3s. 4d. per ton on all fruit and vegetables marketed from the Stanthorpe district; the fund so created is utilised for administrative purposes.

Hail Insurance levy—6s. 8d. per ton on fruit only grown in the northern portion of the Granite Belt, being the contributions of the growers concerned to a Hail Insurance Fund.

Papaw levy—1d. for every four cases or part thereof; the fund so created is utilised for the advertising of papaws.

Tomato levy—¼d. per case on consignments in excess of four cases; used for administrative purposes.

REFUNDS MADE TO GROWERS UNDER VARIOUS SYSTEMS OF FINANCE DURING THE PERIOD TWELVE MONTHS ENDED 30TH JUNE, 1938.

Pineapple Revolving Funds.

(*a*) *Southern Consignors.*—During February, 1938, an amount of £1,042 3s. 3d. was returned to pineapple-growers who had forwarded consignments of pineapples to the Southern States by the Committee of Direction fruit train specials during the year 1934. The rebate was at the rate of 1d. per case.

The total amount rebated to Southern consignors of pineapples for the years 1924 to 1934, both inclusive, is £8,499 2s. 4d.

(*b*) *Cannery Revolving Fund.*—With the monthly payments for cannery pineapples during the winter crop, 1937, and the summer crop, 1938, there was refunded 6d. per case, being the amount retained on deliveries of cannery pineapples during the preceding winter and summer packs. The amounts so returned to growers were—

	£	s.	d.
Winter crop, 1936	5,998	6	9
Summer crop, 1937	5,971	13	4
	£11,970	0	1

The total amount returned to growers from this fund now is £36,301 13s. 7d.

STANTHORPE FRUIT CO-OPERATIVE HAIL INSURANCE FUND.

Growers in the northern end of the Granite Belt district contribute to this fund at the rate of 6s. 8d. per ton on fruit consignments. The Department of Agriculture and Stock also contributes £400 per year, and in addition to the initial contribution of £1,000 from the deciduous section capital, a further contribution of £500 has been made. Hail losses for the 1938 season were very heavy, and an interim payment at the rate of 1s. per bushel has been made, which has absorbed £1,767 12s. 6d. It is expected that a further payment of 9½d. per bushel will be made, which will absorb approximately a further £1,405. The total amount returned from the fund as compensation to those who sustained losses through hail for the 1938 season will be approximately £3,172.

Last season claims amounting to £896 7s. 10d. were paid at the maximum rate of 3s. 4d. per bushel, so that when final payments have been made for the 1938 season, the amount returned to growers from the fund will be approximately £4,069.

POLICY MATTERS.

GENERAL.

Committee of Direction Selling Sections.

Each of the firmly established Committee of Direction selling sections—namely, those at Sydney, Brisbane, and Rockhampton—has experienced a very satisfactory year, the turnover in each instance having shown a gratifying increase. The Committee finds its chief satisfaction in the fact that it has demonstrated that it can give returns and service to the growers which enable it not only to hold, but to increase, its grower connection against all competition. Quite apart from the direct benefits received by actual consignors, all fruitgrowers have benefited indirectly by the improved market tone as a result of the Committee of Direction's operations.

The success of its selling activities has led to a recognition of the fact that, apart from control of factory supplies, the organisation is performing a valuable service, and that in the future it is destined to expand further along these lines. In so doing, the Committee of Direction would be fulfilling one of the principal objects for which it was created—namely, the effective distribution of fruit. Experience has shown that success in the establishment and running of fruit-selling agencies depends, in large measure, upon the services of efficient and properly trained sales officers in the key positions. With the expansion of selling activities in view, therefore, the Committee of Direction adopted the policy of appointing promising juniors as cadet salesmen and keeping a maximum staff on each of its selling sections so that a trained staff will be available when selling activities are being extended to other towns. Progress on the established sections during the past year, however, has been so rapid that difficulty has been experienced in maintaining staffs to cope with such progress, let alone extension to fresh fields.

Brisbane.—Progress in the last two years, but particularly in the last year, has been substantial, as will be noted from the following:—

(i.) The turnover in 1937 exceeded that of 1936 by 60·72 per cent.

(ii.) The turnover for the first six months of 1938 exceeded that for the January to June period of 1937 by 28·53 per cent.

(iii.) The turnover for January to June of 1937 was 98 per cent. higher than for the corresponding period of 1936.

The agency now has amongst its reqular suppliers some of the best growers of each variety of fruit. The increase in supplies has rendered it necessary to seek further space, and the Committee, therefore, has acquired a section adjoining its three sections in the Municipal Market. This organisation now occupies four sections which are used for the display and sale of fruit and vegetables—a greater space than any other agent in the market.

Throughout the year efforts were made to open a section also in the Turbot-street market, but negotiations for the purchase of a section were unsuccessful, as the directors of the company controlling that market advised that under their articles of association the Committee of Direction could not be accepted as a shareholder or a tenant.

Sydney.—That progress has been maintained at a satisfactory pace is indicated by the following comparisons:—

(i.) The turnover in 1937 was 37·55 per cent. greater than in 1936.

(ii.) The turnover for the January to June period of 1938 was 32·58 per cent. greater than for the first six months of 1937.

(iii.) The turnover in the first half-year of 1937 was 39·98 per cent. in excess of that of the corresponding period of 1936.

An adjoining stand was purchased in the fruit market, making three in all, in addition to the banana floor in Ultimo road.

In the vegetable market, the Committee of Direction now occupies three sections, one having been added during the year under review. The extension of selling activities to the vegetable market places the Committee of Direction in a position to give to growers of beans, tomatoes, cucumbers, marrows, and all other vegetables the same satisfactory service that it has given to pineapple, custard apple, papaw, and banana growers. Throughout the year the Committee of Direction's fruit section in Sydney has handled regularly between 25 to 40 per cent. of the weekly loadings of pineapples, at times handling more than 50 per cent. Approximately 70 per cent. of the Queensland custard apple consignments to Sydney and about 50 per cent. of the papaws are marketed through the Committee of Direction of Fruit Marketing.

A recent development in the Sydney activities has been the establishment of a country order department.

The Committee of Direction's sales section is having an excellent influence on the Sydney market, and it is significant that substantial and increasing quantities of New South Wales fruit and vegetables are being handled. The wider the range of varieties handled, the greater is the buying clientele—a factor which is of material assistance in disposing of Queensland tropical fruits.

Rockhampton.—The Rockhampton section has continued to operate in a satisfactory manner—for example: —

(i.) The turnover during 1937-38 was 47·52 per cent. greater than in 1936-37.

(ii.) The turnover in 1936-37 exceeded that of 1935-36 by 15·4 per cent.

During the Stanthorpe season the Committee's floor handled over 61 per cent. of the direct consignments from the Granite Belt to Rockhampton, indicating that its operations have benefited the growers and are appreciated by them. The retail department of the Rockhampton activity is a valuable asset, and has assisted in the return of satisfactory prices to the grower.

Townsville.—The past financial year saw the extension of the Committee of Direction's selling activities to Townsville, thus meeting with the oft-expressed desire of northern fruitgrowers. Investigation previously had indicated that the time was not opportune, primarly for the reason that efficient staff was not available.

At the commencement of what promised to be a record season for deciduous fruits, Stanthorpe growers had pressed for the opening of depôts in country centres. Further investigation at Townsville with the definite intention of immediately opening there resulted in the purchase by the Committee of Direction of the business, in centrally situated premises, of an agent who was reputed to handle 60 per cent. of the fruit business of Townsville. The staff of the previous owner was retained, and an experienced Committee of Direction salesman placed in charge.

The floor commenced operations on 2nd January, 1938. There were, however, initial difficulties, due principally to the fact of opening at the height of the Stanthorpe season, and, as the growers were eager to take advantage of the newly established agency, the floor became inundated with consignments from that district—principally pears, which last season were of very unsatisfactory keeping qualities. These difficulties were eventually overcome, and the Townsville floor is now functioning efficiently.

The establishment of this floor has demonstrated that there will be no appreciable increase in the distribution of fruit in the North unless the price to the consumer is reduced. The Committee, therefore, following upon the success of its retail branch at Rockhampton, decided to open at the end of June a retail establishment in Townsville. It is realised that this departure may for a time result in loss of trade to the wholesale floor, but it must ultimately prove successful if it can demonstrate:—

(*a*) To the public that it can sell fruit at attractive prices;

(*b*) To the growers that, as a result of the retail activity, consumption can be increased and at the same time ruling market rates returned to them.

Marketing Concessions.—It has been the aim of the Committee of Direction to reduce as far as possible the growers' marketing costs. It has for some considerable time, therefore, given the following concessions:—

(i.) In Sydney the charge of 6d. per consignment on Queensland fruit for stamps and stationery is not made, and cheques to Queensland growers are issued on the Brisbane bank, thus saving interstate exchange;

(ii.) In Brisbane cartage rates are cheaper than those of the other carriers.

During the past year, as a result of the satisfactory increase in turnover, the following further concessions were granted:—

(i.) Sydney—all cheques are now issued exchange-free;

(ii.) Brisbane and Rockhampton fruit sections—cheques of £3 and over are issued free of exchange;

(iii.) Brisbane banana floor—all cheques are issued free of exchange;

(iv.) Townsville—cheques of £5 and over are issued free of exchange.

Growers for many years have been agitating for the southern agents, particularly, to open accounts in Queensland country centres to save exchange costs, and it is hoped that the example of the Committee of Direction may induce other agents to follow its lead in the matter of exchange-free cheques.

BRISBANE MARKETS.

Throughout the year efforts have been continued to secure certain very necessary improvements in marketing conditions in Brisbane, notably in the matter of market holidays and the removal of the sale of poultry from the fruit markets. The organisation has greatly appreciated the assistance of the Minister for Agriculture. Holidays in the summertime fall with frequency on a Monday, and so disorganise trade that the grower suffers not only through losing a day's marketing at a time when daily marketing is necessary, as excessive heat leads to rapid decay, but also in the receipt of depressed prices for some time owing to congestion following the holidays. Even in the cooler weather the market is disorganised when holidays fall on a Monday. The sale of poultry alongside fruit is, of course, most unhygienic. The present agreement between the City Council and the tenants of the Municipal Markets gives the tenants the sole right by ballot to decide whether the markets should remain open or not on certain public holidays, and also the right to sell poultry. Following a conference between the Minister for Agriculture, the Lord Mayor, and the chairman and manager of the Committee of Direction, the City Council circularised its tenants asking them to call a meeting to discuss the following proposals:—

(*a*) The withdrawal from agents of the sole right of determining marketing holidays;

(*b*) The elimination of the sale of poultry from the markets.

The agents were unanimously opposed to the suggestions, and conveyed the decision of their meeting to the Vice-Mayor at a recent conference, at which the Department of Agriculture and the Committee of Direction were also represented. The City Council has now requested the manager of the Committee of Direction and the secretary of the Agents' Committee to confer with the town clerk to see if some arrangement mutually satisfactory can be achieved. The Committee of Direction considers that the growers should have some say in the conditions under which their fruit is sold. The Committee's proposal is that the matter of market holidays should be vested in a committee representative of the City Council, the trade, and the growers—a more equitable arrangement than that now existing, which gives this right to the agents only.

BEANS.

The annual conference of beangrowers was held in March last and was largely attended by representatives of the growers, the Department of Agriculture and Stock, and the Banana Growers' Federation of New South Wales. It was decided to again approach the Sydney and Melbourne trade for an agreement, the principal condition of which was the prohibition of canvassing for supplies of beans by agents or their representatives during the period May to October inclusive. The agreement was again secured, although some difficulty was experienced in Sydney owing to the Committee of Direction's opening in the vegetable markets making it a competitor with the trade in bean-selling. It has again been necessary for the Banana Growers' Federation of New South Wales and the Committee of Direction, acting in conjunction, to take disciplinary action against a Sydney agent who broke the agreement.

Production of Disease-free Bean Seed.—The Department of Agriculture and Stock co-operated with the Committee of Direction by inspecting the plots of those growers who were engaging in the production of bean seed. Some progress was made and the scheme is being continued. The scheme provides that the Committee of Direction is to handle the seed and pay the grower the ruling market price for bean seed, plus a bonus of 5s. per bushel for all seed for which the Department of Agriculture issues a certificate of comparative freedom from disease.

Experimental Work.—During the year experiments have been conducted by the Department of Agriculture and Stock in co-operation with the Bean Advisory Committee, which has voted up to £100 from its funds to subsidise Departmental contributions on a fifty-fifty basis. For experimental work last year a sum of £44 was expended by the growers and a similar amount by the Department.

The Bean Advisory Committee is also very appreciative of the experiments that have been conducted with a view to evolving control measures for the bean fly—a pest which causes such serious loss to the industry. The committee has contributed a further £5 towards this experiment.

Production.—Production of beans in Queensland has shown a very rapid increase since 1932, as the following quantities railed interstate indicate:—

1932	1933	1934	1935	1936	1937
773	1,150	1,478	1,655	1,618	1,471 tons.

The slight decline in 1937 can be attributed solely to drought conditions. Already there is every indication that the production for 1938 will greatly exceed that of any previous year, as for a period of six weeks from the beginning of May to the end of June the increase in the number of cases of beans sent interstate over the same period of 1937 was 11,805, the total being 20,950, in comparison with 9,145 for the corresponding period in 1937.

COUNTRY DISTRIBUTION SCHEME.

Railings under this scheme show a very big increase on the quantities despatched last year, and of recent months the increase has been so marked as to indicate a revival of the enthusiasm which greeted the scheme during its initial stages in 1935. The following statistics are of interest:—

NUMBER OF HALF-BUSHEL CASES CONSIGNED.

February to June, 1935.	1935-36.	1936-37.	1937-38.	Increase 1937-38 over previous year.
12,951	11,057	9,276	22,808	13,532

Total railings since inception—56,092 half-bushel cases.

MONTHLY COMPARISONS.

—	Average per week.		
	April.	May.	June.
1935	810	607	386
1936	359	312	191
1937	281	277	337
1938	673	714	705

The increase in the weekly railings was apparent immediately on the introduction of the mixed case of fruit and the mixed case of fruit and vegetables. It is obvious that these mixed cases are fulfilling a long-felt want. The scheme, which is conducted by the joint efforts of the Committee of Direction and the Railway Department, is run on a non-profit-making basis, and no addition is made to the price of the fruit to provide funds for advertising. Its recent success has suggested that a more widespread knowledge of the scheme and its benefits should lead to considerably increased distribution of fruit and vegetables. The various Sectional Group Committees, therefore, have made sums of money available for advertising the scheme. A wireless campaign is being run in the Longreach district concurrently with a newspaper campaign in the Cunnamulla district—two areas sufficiently far apart to enable the relative merits of the two advertising media to be gauged.

Dry Ice Experiments.—Following a conference between the Minister for Agriculture and the manager of Mount Isa Mines Ltd., in relation to the serious difficulties encountered in supplying fresh fruit and green vegetables to that centre during the summer months, the Committee of Direction sent one of its officers to investigate the conditions affecting the marketing and distribution of fruit and vegetables in the North-west, with particular reference to the mining township of Mount Isa. This was followed by a series of experiments, conducted in co-operation with Dry Ice (Q'ld.) Pty. Ltd., with various varieties of fruits and vegetables enclosed in a specially constructed, portable box with a capacity of 15 cwt., and charged with dry ice as the refrigerant. It was desired to investigate the possibilities of this refrigerant for the purpose of transporting these commodities. The Committee voted the sum of £100 towards the cost of the experiment, and the Railway Department franked the container on both the forward and return journeys between Brisbane, Townsville, Mount Isa, and Winton. These experiments, duplicated in so far as Mount Isa is concerned, together with two tests conducted on the Committee's premises in Brisbane, succeeded in demonstrating that highly perishable produce such as fresh fruit and green vegetables, with one or two exceptions, can be transported for long distances in the summer months under refrigeration provided by dry ice.

The approximate cost of dry ice used in these experiments, at the rate of 4d. per lb., worked out at 30s. 8d. per test, or approximately 9d. per half-bushel case.

The results, which have indicated a possible method of overcoming the difficulties experienced in providing the residents of far western districts with these foodstuffs at all seasons of the year, are sufficiently encouraging to warrant further investigation.

INTERSTATE TRANSPORT CONDITIONS.

During the marketing of the spring tomato crop last year the Redlands growers had a special representative stationed in the Sydney market. This representative reported that, as a result of his observations, he was of the opinion that some action would require to be taken to mitigate the ill-effects occasioned to Queensland fruits, and particularly tomatoes, by the transhipping necessitated through the difference in railway gauges of the two States. In consequence of this report, a deputation to the Commissioner for Railways was arranged, when the question was discussed between representatives of the tomato-growers and officials of the Railway and Agricultural Departments. It was decided that every effort should be made, both by the growers when loading their fruit, and by the Railway Department when transhipping consignments at Clapham, to segregate the different varieties of fruit and vegetables. As a result of these discussions, the Railway Department has advised that provision will be made in the financial estimates for the coming year for the erection at Clapham of a transhipping platform provided with a covering roof.

BANANA SECTION.

Production.—Queensland banana production in the year under review has about reached its lowest ebb. Although the production of 498,386 cases shows little improvement on last year's figure of 466,374 cases, there are other indications that the industry is now on the up-grade. The New South Wales production showed a slight decrease on the production of the previous year. Warnings have recently been sounded in New South Wales against over production.

Marketing.—With lesser quantities available from Queensland and New South Wales, satisfactory prices were realised throughout the year. In April prices in both Sydney and Brisbane were over 20s. to 25s. per case, while outstanding sales at 30s. and 26s. were recorded from Sydney and Brisbane respectively, almost recalling the pre-depression prices of 1929. Returns on the average were better than they have been for some years past.

Ripening Rooms.—The lack of support given the Melbourne ripening rooms made it necessary to reduce working costs to a minimum. Fifteen of the rooms have been dismantled, and certain of the equipment has been transferred to Sydney, where it has been used to modernise the Sydney plant and thus provide an improved service there.

During the recent citrus crop the Melbourne rooms rendered a valuable service in the storage and colouring of this fruit, and very heavy quantities were handled.

The Committee of Direction was pleased to have further tangible recognition of its pioneer work in banana-ripening in the erection of similar-type rooms by the New South Wales Banana Marketing Board, which Board has already done much to stabilise the Sydney banana market. The Committee also agreed, in order to assist the banana industry generally and the Banana Marketing Board in particular, to make the services of its best ripener available to the Board. This officer supervises both the Committee of Direction and the Banana Marketing Board plants in Sydney. The Committee, in sanctioning this arrangement, considered that the services of this officer should be utilised in the quarter where he would have control of the largest volume of bananas for ripening.

In Brisbane and Rockhampton the rooms worked to capacity during the summer months, greatly increased quantities being handled in Rockhampton.

Brisbane Sales Floor.—The wholesale floor in Brisbane for cased bananas continued to give excellent service to the industry. Competition both from Brisbane and southern buyers has been keen.

PINEAPPLE SECTION.

The year has proved a most eventful one for the Queensland pineapple industry. The growers have been confronted with several major problems, and some very vital decisions have been made.

Production.—Production has shown a very big increase, particularly apparent in the summer crop, when the quantity handled by the canneries of 8,925½ tons—the equivalent of 357,022 (1½ bushel) cases "tops on"—constituted a crop record, the previous highest quantity being 245,683 cases from the 1936 winter crop.

The record summer crop, which it is expected will be followed by an equally heavy winter crop, is due to the greatly increased yield per acre which followed the application of modern practices to the production of pineapples. One factor, of course, is the increased area that has been planted with pineapples, but of greater importance to the industry is the extent to which the growers have adopted the cultural methods advocated as a result of the work conducted under the pineapple investigation programme. The Committee of Direction's contribution to this work is £300 per annum.

The success that has attended the scientific investigation in pineapple cultural methods has inspired other branches of the fruit industry to offer financial assistance in order that special attention by way of scientific investigation and research may be given to fruits in which they are particularly interested.

Cannery Link-up.—In agreeing by an 87·82 per cent. majority vote in February last to the purchase of a half-interest in the pineapple-canning business of the Victoria Cross Manufacturing Co. Pty Ltd., the pineapple-growers made an important and far-reaching decision. The proposal originated from the suggestion of the Minister that pineapples produced in Queensland should not lose their identity after conversion into the canned product marketed overseas, in view of the fact that the growers' organisation had played a not inconsiderable part in the development of an overseas marketing outlet.

To meet the purchase price of the half-interest in this factory, a deduction of 10s. per ton is made from payments due to pineapple-growers for fruit disposed of to any cannery in Queensland. This deduction is to be paid into a fund which is to operate on the revolving principle, which means that, when the amount has been paid off, refunds will be made to the growers in the order in which the deductions are made. It is a condition of the purchase that at the end of each financial year 50 per cent. of the profits of the company are to be returned to the growers, distributed to individuals *pro rata* to their supplies to factories. The pineapple-canning business is to be conducted in future by a new company, which is to proceed to registration at an early date, and which is to be known as Queensland Canneries Pty. Ltd. The memorandum and articles of association provide for two directors to represent the growers' interests. The Pineapple Sectional Group Committee has appointed the manager of the Committee of Direction (Mr. B. Flewell-Smith) and Mr. H. Fullerton as provisional directors until the first meeting of the new company after registration.

Experimental Shipment of Fresh Pineapples to England.—In December last the Committee of Direction availed itself of the offer of an experimental chamber on the T.S.M.V. "Brisbane Star" for a trial consignment of fresh pineapples to the United Kingdom to be shipped under what has been described as the Eigin Gas Process. Although it was recognised that the offer came at a time when pineapples were not at their best, some excellent fruit was secured and packed in special cases under the supervision of officers of the Department of Agriculture and Stock. Owing to a misunderstanding over the dimensions of the chamber, however, twenty-three cases were supplied in excess of its capacity. Permission was obtained for the unloading of twenty cases for sale in Perth, and the balance of three cases was carried at a temperature of about 35 deg. to 38 deg. under ordinary cold-storage conditions as a check. The twenty cases sold in Perth were stated to contain the finest pineapples seen on that market and brought the very attractive prices of 10s. and 10s. 6d. for cases of "six" fruit and 12s. for cases of "eight" fruit, thus proving that no fault could be found with the fruit itself or the packing. The fruit was inspected by the London selling agents appointed by the Committee of Direction, and there was also a courtesy inspection by another London agent and by the Queensland Agent-General. All reports were that the fruit generally had not arrived in good condition. When offered for sale in London, the highest price received was 5s. 3d. per case. Although the outcome of the shipment was disappointing, the expense to the industry can be considered warranted, as it has been demonstrated that, with the present facilities available, it is not possible to market fresh pineapples from Queensland on a commercial scale in Great Britain.

Overseas Marketing of Canned Pineapples.—When making arrangements for the canning of the year's crop, it was realised that production would be greatly in excess of that of any previous year, and arrangements were based on a summer crop of 300,000 cases and a winter crop of 200,000 cases. With indications that the crops might be even heavier than estimated, with consequently larger quantities to be processed for export and heavier losses entailed, application was made to the Fruit Industry Sugar Concession Committee for the price of canning pineapples to be maintained at £9 6s. 8d. per ton, but, to safeguard the position, the growers offered to set aside £1 per ton from such price to create a fund to meet export losses in excess of the grant from that committee. In view of this precautionary measure (the wisdom of which was demonstrated when the summer crop eventually realised 57,000 cases in excess of the estimate), the Fruit Industry Sugar Concession Committee was content to grant a sum of £8,000 on a price basis of £9 6s. 8d. per ton.

United Kingdom Preference.—The reports of the Anglo-American trade negotiations and the suggestion that there was likely to be a lowering of the United Kingdom preference of 15 per cent. on Australian canned pineapples caused serious concern in the pineapple industry, it being feared that the extent to which drought conditions had influenced exports during the last two years would not be fully appreciated, and, therefore, the preferential duties might be reduced on the grounds that Australia was not an "effective supplier" of canned pineapples, especially as compared with the Australian exports to the United Kingdom of canned peaches, pears, and apricots.

The protracted nature of the Anglo-American negotiations has seriously jeopardised the position of Australian canned pineapples on the United Kingdom market, as sales have been slow, due to the American agents advising that a fall in prices could be expected. This forecasted reduction in Hawaiian prices has recently taken place. Faced with unsold stocks ex the summer pack, a winter crop of the same size as the summer crop—that is, a total cannery crop of 700,000 cases, or 200,000 cases in excess of the quantity on which the year's arrangements had been based—it was essential for canning arrangements to be reviewed. Prices of Australian canned pineapples have had to be drastically reduced in the United Kingdom to meet the Hawaiian competition, and to cover the heavy loss entailed in meeting these reductions in price. Should the losses not prove as heavy as anticipated, there will be returned to growers a *pro rata* payment on their deductions—first of 16s. 8d., and then £1.

The recent announcement to the effect that the Ottawa Agreement should be continued for another year has averted, at least for the time being, the danger of a reduction in the preference on supplies of Dominion-grown pineapples to the United Kingdom.

CITRUS SECTION.

Production.—After two years of short crops as a result of drought conditions, a substantial crop is anticipated for 1938. Already large quantities, particularly of mandarins, have been marketed.

Bonus Scheme.—The Citrus Committee decided to reinstitute the bonus scheme this season. It differed from the previous scheme, in that the basis of the bonus was 1s. per case, as against 2s. per case previously, and that the scheme was also made applicable to the Melbourne market; furthermore, a small sum was allocated for the payment of a bonus of 1s. per case on lemons consigned to Sydney. A sum of £400 was allocated for the scheme, £200 being for the payment of the bonus on the first 4,000 (equivalent) bushel cases of mandarins of average quality marketed in Melbourne. The remaining £200 were allocated to the Sydney market, of which £50 were to be expended in the payment of 1s. per case on lemons. In respect of the Sydney market, a condition of the bonus was that the fruit should be marketed from the Committee of Direction's section, and that it would be paid only on fruit of "approved" quality. In Melbourne, where the Committee of Direction had no selling section established, it was paid on fruit of average quality marketed through any agent.

The district to benefit from the Melbourne bonus was the Howard-Burrum area. Unfortunately, fruit-fly ravages caused some growers to pick the fruit earlier than they normally would, with the result that the bonus in Melbourne was rapidly used up; furthermore, final payments were made at the rate of 9½d. per case.

for the reason that the last consignments brought the number of cases to participate in the bonus up to 4,200 bushel and 45 half-bushel cases respectively.

Queensland mandarins in Sydney, unfortunately, have had to meet the competition of a very heavy production of New South Wales fruit of a quality better than that offered in previous years. Only small quantities on the Sydney market participated in the bonus.

Factory Outlet.—Canneries again absorbed all Sevilles and lemons offering. On account of drought conditions in 1937, the orange crop in that year was light. Unfortunately, growers submitted crop estimates far in excess of what they were ultimately prepared to forward. The Committee of Direction, on the basis of growers' estimates, arranged to supply canners' full requirements, but deliveries from the early portion of the crop were most disappointing. After again checking up with growers, the Committee of Direction persuaded canners not to book in the South, but to await the late Valencia crop, which it was estimated would give ample fruit for canners' requirements. Growers again failed to forward supplies, and, as a result, Queensland factories had great difficulty in securing supplies of juice from the South, which would have been readily available had their orders been placed earlier in the season. Canners in 1938 agreed to a price increase of £1 per ton for juice oranges, but insisted on obtaining their supplies from the early crop rather than risk a repetition of their experience in the previous year.

OTHER FRUITS SECTION.

Papaws.—Owing to drought conditions, the crop during the first portion of the financial year was abnormally light, and canners did not receive their full requirements. Heavier supplies have been available in 1938, as a result of increased acreage and better growing conditions.

Factory Price.—Although canners' costs had increased and there was every indication of heavier supplies being available, the Committee of Direction was successful in maintaining the factory price for ripe papaws at £10 10s. per ton.

Green Papaws.—With the price of the ripe fruit fixed at £10 10s. per ton, the growers requested a maintenance of the price for green papaws at the previous year's figure of £8 10s. per ton. The canner principally engaged in the manufacture of chutney advised early in April that, owing to increased costs, he was unable to pay more than £7 5s. per ton. Two meetings of the papaw-growers particularly interested in the supply of green papaws were held, both meetings confirming the price of £8 10s. The Committee of Direction, at the request of the growers, has been watching the position to see that the decision of the Committee is honoured and that no deliveries will be made at less than the agreed-upon price. The position was awkward at times by reason of the fact that some growers were experiencing serious losses through "die-back" and were desirous of placing their green fruit at whatever price was offering, so that they might reap some gain before the fruit was a total loss. They recognised, however, that a weakening at this stage could only lead to reduced prices for the ripe fruit, and the Committee of Direction was not compelled to take action against any grower.

Passion Fruit.—The 1937-38 crops indicate that increased production can be expected. Production is mainly centred in the Mount Cotton district, and prior to each crop the Committee of Direction discusses marketing arrangements with this centre. Certain marketing difficulties were experienced in connection with the summer crop; a factory price of 9s. per bag was obtained, but the Committee of Direction only placed the quantities available with great difficulty, cold-storing having to be resorted to to assist the position. For the subsequent crop the price was reduced to 2d. per lb. or 6s. per bag.

Strawberries.—A large crop was handled by canneries, the canning season terminating on 14th December with a total of 153 tons. The previous highest quantity taken by canners was in 1929, when 180 tons were placed, but of this quantity approximately 30 tons were processed on behalf of the Committee of Direction.

Growers received a price of 6d. per lb. gross—an increase of ½d. on the previous year's price—and all quantities offering for factory were placed. Strawberry-growers, therefore, with a factory outlet for all their surplus fruit at an attractive price, were able to maintain good prices for their market fruit, and had one of the best seasons on record. This happy state of affairs was brought about through the co-operation of the principal canner and the Committee of Direction, in that, prior to the planting season, the Committee of Direction made an announcement as to the price likely to operate, giving the assurance of an unlimited factory outlet. Armed with this knowledge, growers planted with confidence, but drought conditions reduced the crop.

A similar announcement was made prior to the 1938 season, when it was advised that a minimum of 150 tons would be accepted by the principal canner at a minimum price of 5¼d. gross per lb. It was hoped that there would be no reduction on last year's price, but, unfortunately, carry-over stocks of strawberry conserve are heavier, and the price of 5¼d. will prevail.

Figs.—The usual meeting of fig-growers was held prior to the season, when, in view of the heavy crop offering, it was agreed that the price should be reduced from 2d. to 1½d. per lb., so that the total crop could be placed. The season terminated on 28th February with 134 tons being taken by canners—somewhat short of the estimated crop of 150 tons, but greatly in excess of the crop of the previous year, when 68 tons were placed.

Custard Apples.—Production was very heavy. Immediately before and after Easter glut conditions prevailed on the Brisbane market. The Committee of Direction realised that unless some special effort were made the general run of prices to the growers would be about 1s. to 1s. 6d. per case; sales had already been made as low as 1s. 3d. Accordingly, the co-operation of the Australian Broadcasting Commission was secured, and announcements were made through Station 4QG at regular intervals in the name of the Redland Bay growers to the effect that the fruit was offering at attractive prices. The Committee of Direction also approached the Public Service, the Brisbane City Council, the Railway Department, the canneries, and other business houses, offering to deliver the fruit at 2s. per case. This "drive"—in the instance of the Public Service (the Department of Agriculture and Stock readily co-operated)—resulted in substantial orders being received, and the placing of these orders at 2s. immediately had the result of stabilising the market at this figure. But for these efforts, there is no doubt custard-apple growers would have been returned ruinous glut prices.

Tomatoes.—The marketing in Sydney of the spring crop of the Redlands district was greatly assisted by the presence of the growers' own representative, who, in addition to reporting direct to growers when necessary as to the condition of consignments on arrival, and making suggestions for improvement, was able to investigate growers' complaints at first-hand. The mass meeting of tomato-growers to which he presented his report on his return was enthusiastic that the representation had been of the greatest value to the industry.

DECIDUOUS SECTION.

Production.—The Stanthorpe district experienced a record season in 1937-38, as shown in the following comparative figures of tonnages:—

——	1936-37.	1937-38.
	Tons.	Tons.
Brisbane—		
By Rail	10,428	12,929
By Road	1,369	2,809
Rockhampton	463	718
Other Queensland Centres ..	5,556	8,090
	17,816	24,546

Increase—6,730 tons.

As a further indication of the prolific season, the total number of packages received on the Brisbane market, both by rail and road, was 979,881, being the highest quantity for the fifteen years of which the Committee of Direction has record, the next highest being the 1932-33 season, when 923,229 packages were received in Brisbane.

Apple Export.—The total export from Queensland for the 1937-38 season was 35,236 cases, compared with 25,941 cases during the 1936-37 season. This was the second highest export recorded since 1932, the greatest being 46,027 cases in 1934. The destination of the 1938 export was as follows:—

	Cases.
United Kingdom and Intermediate Ports	20,539
Eastern Markets	14,697
Total	35,236

The export to the East exceeded by more than 4,000 cases the previous record for shipment to the Eastern markets.

The most satisfactory feature of the season's export was that 28,497 cases of Granny Smiths were shipped, this figure being a record for the variety. Equally satisfactory was the fact that growers received their best return. Due to the activities of the Committee of Direction in entering into direct negotiations with Eastern and United Kingdom exporters, growers were offered 8s. per case f.o.r. Stanthorpe for the Granny Smith apple. The direct result of this action was that this price became the minimum, and other exporters had to offer this figure to obtain supplies. At the end of the season growers who had sold to the Committee of Direction were paid a bonus on Granny Smiths of 3d. per case for all counts over 100.

The Committee of Direction placed 14,389 cases of Granny Smith apples during the season, as against 3,640 in the preceding year. Excellent reports were received regarding the quality of the apples shipped, and prospects are bright for placing at least the same quantity during the 1938-39 season.

A total of 2,952 cases of Jonathan apples was shipped to London "on consignment," but the returns proved unsatisfactory, averaging 3s. 3·34d. per case f.o.r. Stanthorpe, as against 7s. 5·95d. in 1937. The growers who shipped were, however, protected by a guarantee of 5s. 6d. per case f.o.r. Stanthorpe which was given by the Committee of Direction. As a result, a substantial loss was sustained. A report on the out-turn and packing of the Jonathans was very satisfactory. The low realisations were due to a depressed market caused by a large carry-over of apples in cold stores. The main reason for the export of Jonathans was to afford relief to the local market, which in normal seasons is overloaded during the peak of the Jonathan crop.

Seven hundred and forty-six cases of Dunn's Seedling apples were exported "on consignment," the average return being 4s. 8·47d. per case f.o.r. Stanthorpe. This was the highest result yet attained for this variety.

A small quantity of Delicious, Alfristons, and King Davids were also exported "on consignment," but the realisations were not satisfactory.

The total quantity of apples exported "on consignment" to the United Kingdom was 4,250 cases.

No difficulty was experienced in filling the apple quota of 20,000 cases allotted to this State by the Apple and Pear Export Council, and, if space had been available, the actual export to the United Kingdom of 20,539 cases would have been exceeded.

Grapes.—After a lapse of a number of years, the export of grapes during the 1937-38 season was organised. Inquiries showed that, provided the grapes arrived in good condition, prospects were favourable for shiping this fruit to Hong Kong during February and March, when the market was bare. Six hundred and seven cases were shipped to Hong Kong, the majority comprising Black Muscats. Only two varieties opened in good condition, but these were, unfortunately, only a very small proportion of the consignment; consequently, a substantial loss was sustained.

An experimental shipment of 410 cases of grapes was made to Vancouver. Enquiries showed that there were fair prospects on that market also. The grapes exported to the East and Vancouver were subject to Government inspection, and when shipped there was every confidence in their finding a satisfactory market. The result of the Vancouver shipment was, however, even more unsatisfactory than the Hong Kong shipment.

The first report to hand indicated that the grapes had apparently arrived in good condition, but later reports advised that deterioration very rapidly set in. The final advice received was that no returns could be expected, as the fruit became a total loss.

Plums.—During the season a small experimental shipment of plums was made to the East. A very pleasing report was received regarding the quality and packing. There now seems to be definite prospects of working up a small export trade for this variety.

Stanthorpe Hail Insurance Fund.—Unfortunately, losses from hail were very severe, and, to assist the growers concerned, the permission of the Minister for Agriculture and Stock was obtained for an interim payment of 1s. per bushel on the assessed damage in the 1937-38 deciduous fruit crop. In the previous year 3s. 4d. per bushel—the maximum compensation—was paid from the fund. It was obvious that the maximum rate of compensation could not be paid from the fund in respect of the 1937-38 season, because of the extensive damage by hail. To enable a more satisfactory rate of compensation to be paid, the growers situated within the area embraced by the Hail Insurance Scheme have agreed, by ballot, to a transfer of £500 to the Hail Fund from that portion of the deciduous capital standing to the credit of their (the northern) end of the Stanthorpe district, to permit of an increased payment per bushel.

The scheme provides that each season, after all collections have been made, half the amount in the fund is available for distribution, less working expenses, although the maximum payment must not exceed 3s. 4d. per bushel. The fund now stands as follows:—

				£	*s.*	*d.*
Carried forward from last season . .				2,414	14	8
Contribution, Department of Agriculture				400	0	0
Grower contributions at the rate of 6s. 8d. per ton				3,285	3	8
				6,099	18	4
Add—Transfer from Deciduous Capital				500	0	0
				6,599	18	4
Available for distribution				3,299	19	2
Less—						
Expenses actual	£107	5	1			
Expenses probable	20	0	0			
				127	5	1
				3,172	14	1
Interim payment at 1s. per bushel absorbed				1,767	12	6
Balance still to be distributed . .				£1,405	1	7

It appears, therefore, that a further payment of 9½d. per bushel will be possible, making the total rate of compensation payable this season 1s. 9½d. per bushel. The balance to be carried forward as the nucleus of next season's fund is £3,299 19s. 2d.

HONEY BOARD.

Personnel of the Board to 8th March, 1941:—Messrs. O. N. Tanner (Chairman), C. W. Edwards, R. V. Woodrow, H. E. Fagg, and R. Wilson (Acting Director of Marketing).

The Board members' term of office expired on the 8th March, the calling for nominations for the election of growers' representatives for a further three years resulting in the retiring members being returned unopposed. Mr. Tanner was reappointed Chairman.

The election of members of a commodity board for short terms is not generally conducive to the continuity of a Board's policy and the efficient administration of the affairs of the industry—hence the reason for commodity boards being given the opportunity in 1937 to recommend a three-year term. The Honey Board's recommendation to this effect could not be acted upon without an extension of the Pool, which was due to expire by effluxion of time in March, 1939. A notice of intention was, therefore, issued in January last to extend the Pool for a further five years, and by virtue of the provisions of the Primary Producers' Organisation and Marketing Acts growers were given the right to petition for a poll on the question of continuance or otherwise, for the longer period. As no such request was forthcoming, however, the Pool was accordingly extended.

The total number of 60-lb. tins of honey sold through the Board's agents for the twelve months just ended, was 3,382, compared with 4,188 tins for the previous year. The quantity of beeswax sold amounted to 6,095 lb., as against 10,126 lb. in 1936-37. The stocks of honey on hand at the date of this report are 4,202 (60 lb.) tins. As from the 1st January, 1938, the State Produce Agency, Limited, was appointed the Board's selling agent. The unsatisfactory conditions which prevailed in 1936-37, through drought and a depressed local market, resulting from heavy importations of honey from Southern States at low prices, continued to manifest themselves during the period under review. The present prospects for the ensuing year's flow appear excellent, but the Board is still faced with Southern competition, a problem now entering into its fifth year of existence, and one which it is understood is still causing Southern beekeepers some concern because of unsatisfactory financial returns for their efforts, in addition to their capital outlay. Such a state of affairs would suggest an examination of the position by the producers in the various States, with a view to stabilising the beekeeping industry by the implementation of a Commonwealth scheme for the orderly marketing of honey. Although constitutional difficulties present themselves in this connection, still the successful functioning of marketing plans of this nature in other industries, peculiar to more than one State, provides sufficient commendation for an investigation of this aspect by apiarists.

NORTHERN PIG BOARD.

Personnel of the Board to 31st December, 1940:—Messrs. C. W. Roseblade (Chairman), D. Johnston, J. E. Foxwell, A. A. Knudson, W. J. Sloan, and R. Wilson (Acting Director of Marketing).

On calling for nominations for the election of five growers' representatives to the Board for the new term of office which commenced on the 1st January, 1938, eight candidates' names were submitted, and in the resultant ballot the personnel enumerated above were successful.

The number of pigs handled by the Board during the twelve months just concluded, was as follows:—

First grade	9,306
Second grade	1,173
Third grade	368
Graded for small goods purposes ..	258
	11,105

Two hundred and fourteen head of cattle were also slaughtered. Forty-one pigs died in transit, 608 were sold alive to butchers, and the remaining 10,456 were sold to the North Queensland Co-operative Bacon Association, Limited. The quality of the pigs received during the year was of high standard, approximately 84 per cent. being first-grade, averaging 103 lb. dressed weight. A deferred pay of ¼d. per lb. on all grades of pigs supplied during the half-year ended 31st December, 1937, was distributed, making the average price paid for first-grade baconers for the twelve months 5·96d. per lb. dressed weight, compared with 5·45d. per lb. for the previous year.

The total disbursements to growers on account of pigs and cattle supplied amounted to £28,360. Condemnations for the period were reasonably low, indicating that growers are exercising all possible care in the matter of disease.

PEANUT BOARD.

Personnel of the Board to 27th August, 1940:—Messrs. C. F. Adermann (Chairman), L. V. Young, R. R. Nothling, J. F. Quilter, and R. Wilson (Acting Director of Marketing).

Prior to the expiration of the Board members' term of office on the 27th August, 1937, nominations were called for the election of the growers' representatives for a period of three years. The successful candidates of the four who contested the election in district No. 1 were Messrs. Adermann and Young, while Mr. Nothling was returned unopposed for district No. 2, and Mr. Quilter obtained a majority over his two opponents in district No. 3. Mr. A. G. Whiting, the retiring member for No. 3 district, did not nominate. Mr. Adermann was reappointed Chairman of the Board.

It was intimated in the last annual report that the storage accommodation at Kingaroy was inadequate, and that the Board had under consideration the matter of the erection of additional silos at that centre. The year under review saw the successful fruition of these plans by the completion of arrangements for the construction of a 24-bin concrete silo and 14 interspaced bins with a storage capacity for 4,040 tons of the Virginia Bunch variety of peanuts. A five-storey concrete workhouse will be attached for treating and cleaning purposes. The cost of the complete undertaking will approximate £58,000, the necessary finance having been obtained by the expenditure of funds standing to the credit of the Board's levy account, and the balance by means of a £46,000 loan from the Commonwealth Bank of Australia under Government guarantee. This indebtedness is to be liquidated by the 27th August, 1947, to which date the life of the Pool was automatically extended during 1937, no petition having been received from growers for a poll on the question of such extension. The new silos and equipment are at present under construction, and, it is anticipated, will be completed in September next, when the total value of the premises and plant owned by Queensland peanut growers will approximate £118,000. The extension of the peanut industry in Queensland during the last 14 years is most remarkable, particularly when consideration is given to the fact that only 231 tons of peanuts were produced in the 1924 season which marked the first occasion when this commodity could be said to have been grown to any extent on a commercial scale in this State. This extraordinary progress is attributable to the foresightedness of peanut growers in taking advantage of the opportunity provided under Queensland marketing legislation to apply the collective system of marketing to the primary product in question, by setting up the Queensland Peanut Board for the purpose of disposing of their crops. Such a marked advance amply demonstrates the benefits to be derived under this system.

1936 Season.—The 1936 season's transactions have not yet been finalised, but it is anticipated that same will be concluded within the next two months, when a final advance payment will be made to growers.

1937 Season.—Stocks are still on hand from the 1937 season's intake, but some little time will elapse before finalisation. The Board is making every endeavour to bring this about at as early a date as possible.

1938 Season.—Beneficial rain in the South Burnett during October, 1937, coincided with the planting time and provided excellent conditions on the areas devoted to the cultivation of peanuts for the 1938 crop, but dry weather, together with a prolonged heatwave early in the new year, have been responsible for a considerable reduction in that district's yield, which, up to that time, was estimated at 7,000 tons of Virginia Bunch and 2,350 tons of Spanish peanuts.

Although this setback was in one sense disadvantageous to growers, it has, nevertheless, had the effect of relieving the industry of the necessity of having to deal with the problem of heavy overproduction and a resultant saturated market, the dangers of which the Board had warned the producers against by recommending the planting of from 4,000 to 5,000 acres of Spanish and 10,000 acres of Virginia Bunch.

The area planted, however, was approximately 4,700 acres of Spanish and 14,000 of Virginia Bunch in the South Burnett district, plus 1,200 and 1,800 acres, respectively, of Virginia Bunch in Central Queensland, and the Atherton Tableland.

Based on an average yield of half a ton to the acre, the total production for the three districts in the early stages of the 1938 crop's growth was estimated at 8,500 tons of Virginia Bunch and 2,350 tons of Spanish peanuts. When it is considered that the Commonwealth annual requirements are approximately 4,000 tons of Virginia Bunch and 2,000 tons of Spanish peanuts, the seriousness of overproduction to such an extent will be readily appreciated.

The adverse weather conditions referred to have thus led to a revised estimated yield of 5,750 tons and 2,000 tons of Virginia Bunch and Spanish, respectively. Excessive rains in the South Burnett about the time harvesting commenced, have affected the quality of the peanuts from the current crop, which will be reflected in the financial returns receivable by growers.

NORTHERN PLYWOOD AND VENEER BOARD.

Personnel of the Board to 2nd May, 1941:—Messrs. J. F. Brett (Chairman), G. D. Gummow, C. R. Paterson, H. S. Hunter (Deputy for the Director of Marketing), and G. A. Duffy (Chairman, Timber Advisory Committee, Forestry Sub-Department).

Heretofore the operations of the Board have been extended from year to year, but in January, 1938, approval was granted for the extension of the life of this Board to 2nd May, 1942. Consequent upon this, in April the existing members of the Board were reappointed to 2nd May, 1941. In May, Mr. J. F. Brett was again re-elected chairman of the Board until the same date.

In August, Messrs. Hancock Bros. Pty. Ltd, completed their mill at Cairns, and production was commenced. Thereupon Mr. C. R. Paterson was appointed to the Board as from 16th October.

In December a conference took place between members of the Plywood and Veneer Board (Queensland), and this Board, and a working arrangement for co-operation between the Boards was adopted, a quota being mutually agreed upon for the Northern factories; this quota came into operation on 1st January, 1938.

A further plywood factory is in course of erection within the area over which the Board has jurisdiction, and the principals expect that production will commence at an early date.

The deliveries for the six months ended 30th June, 1938, calculated on the basis of 3/16 inch equivalent, were 2,831,822 square feet.

PLYWOOD AND VENEER BOARD (QUEENSLAND).

Personnel of the Board to 2nd May, 1941:—Messrs. J. F. Brett (Chairman), R. H. Bentley, M. J. G. Brims, J. E. Christoe, R. J. Donaldson, J. W. Jackson, G. W. Nutting, J. H. Hancock, H. R. Hancock, C. R. Paterson, H. S. Hunter (Deputy for Director of Marketing), and G. A. Duffy (Chairman, Timber Advisory Committee, Forestry Sub-Department).

The Board wishes me to place upon record their sincere regret at the death, in July, 1937, of Mr. A. E. Gibson, who had been the deputy on the Board for the Director of Marketing since it was first constituted in 1934.

Heretofore, the operations of the Board have been extended from year to year, but in January, 1938, approval was granted for the extension of the life of this Board to 2nd May, 1942. Consequent upon this, in April the existing members of the Board were reappointed to 2nd May, 1941. In May, Mr. J. F. Brett was again re-elected chairman of the Board until the same date.

The Board has continued, with success, to apply the principles of orderly marketing to the sale of pine plywood manufactured in this State. As the principal market for Queensland's output of this commodity is in the Southern States, a policy of advertising in Southern trade journals has been adopted in order that the uses and value of plywood may become better known.

In connection with the grading of plywood, a standing committee has been working for some years in conjunction with the Standards Association of Australia, and it is pleasing to record that during last year finality was reached and the grading rules of the Standards Association in relation to plywood were adopted. This assures buyers of standard grades of plywood, and has the effect of raising the standard of manufacture. Since its inception, the operations of the Board have brought about consistent improvement in the quality of its product, and during the year under review complaints on this score were almost negligible.

As in the past, the Board has co-operated with the Queensland Sub-Department of Forestry, and with the Council for Scientific and Industrial Research. The Board, during the year, donated the sum of £100 to C.S.I.R. to assist researches conducted by that Council in connection with plywood manufacture.

Sales for the year amounted to 50,864,464 square feet, based on the equivalent of 3/16 inch in thickness; this, while being an increase of 4,252,796 square feet over the 1937 output, is still 3,563,643 square feet below the output for 1936. The distribution was as follows:—

	Sq. ft.
Queensland	6,814,929
Interstate	43,962,406
Great Britain	87,129
	50,864,464

the value of same being £381,483.

In last year's annual report it was intimated that the decrease in turnover occurred chiefly in the July-December period, and that turnover again reached former proportions in the January-June period. The reverse has been the experience during this year, the turnover for the two periods being as under:—

July to December—28,257,959 square feet.
January to June—22,606,505 square feet.

Thus, the latter period shows a decrease of 20 per cent. on those of the former period. This mainly is attributable to intensified competition by factories in the Southern States through reduced rates prevailing for imported logs.

The administrative levy for the year was at the rate of 3d. per 100 square feet on deliveries made on the basis of 3/16 inch equivalent. The cost of administration averaged .70d. per 100 square feet, while bonus discount paid to and including provision for payments due to buyers of over 500,000 square feet per annum absorbed 1.91d., making a total of 2.61d.

WHEAT BOARD.

Personnel of Board to 31st August, 1938:—Messrs. E. A. Thomas (Chairman), W. J. Brimblecombe, T. W. McIntyre, T. Brewer, and R. Wilson (Acting Director of Marketing).

1936-37 Season.—This season's transactions have been finalised, the payments per bushel to growers, less dockages according to quality, amounting to 5s. 5½d. for milling wheat and 4s. 5½d. for feed wheat, net on rails at growers' stations. The quantity of wheat delivered to the Board for this particular season aggregated 2,042,090 bushels, comprising 2,039,665 bushels of milling quality and 2,425 bushels classified as "feed" wheat. The weight gain amounted to 9,997 bushels and the Pool expenditure £34,943 (4·107d. per bushel). Hail insurance compensation paid to growers totalled £1,021 5s. 7d.

1937-38 Season.—Although the 1937-38 season's acreage, according to returns furnished by growers to the Board, was set down at 405,967 acres, compared with 349,765 for the previous season, the absence of rain during the early period of the crop's growth was responsible for a reduction in the acreage which would otherwise have been devoted to wheat. Rain in October and early in November, however, enhanced the prospects for the area under cultivation and afforded considerable relief to farmers, particularly those who had found it necessary to feed off their crops to stock owing to the dry conditions prevailing up to that time. Unfortunately, these improved conditions were offset by hail storms and the prevalence of rust which had a marked effect on many crops. In respect to hail damage for the season in question, the loss sustained was assessed by the Board at 268,000 bushels.

Deliveries up to June 30th, 1938, are as follow:—

	Bushels.	Lb.
Milling Wheat	3,287,257	9
No. 1A Feed Wheat	54,187	53
No. 1 Feed Wheat	171,996	36
No. 2 Feed Wheat	41,977	19
	3,555,420	57

Growers have received to date, a first advance payment of 3s. 6d. per bushel net on rails at growers' stations for Q1 wheat, less dockages according to quality, and less a levy of 1d. per bushel which has been deducted for the purpose of supplementing the first advance payment of hail insurance compensation from the Board's Hail Insurance Reserve Fund to those growers whose crops sustained damage in this manner, and who were entitled to compensation. Negotiations were again satisfactorily concluded for the disposal of the Board's milling intake to Queensland millers on a similar basis to that which applied in the previous season, the price for Q2A at loading stations being the equivalent of sellers' values for f.a.q. parcels at Darling Harbour, while the selling rates agreed upon for Q1 and Q2 were 1½d. and 3d. per bushel in excess of that for Q2A.

1938-39 Crop Prospects.—Good rains during the current planting season have enhanced the prospects for the 1938-39 crop, and the present indications are that given favourable conditions during the remainder of the growing period, the resultant yield should exceed that for last season and be more in keeping with the acreage seeded.

Reports on the world situation for the 1938-39 crop year forecast large harvests in producing countries, and a considerable increase in the supplies available for export. Should these conditions prevail, there seems little likelihood of much improvement, if any, on the present depressed values on the domestic market.

GENERAL.

After the death on the 1st May last of Mr. E. Graham, Under Secretary of the Department, who also had occupied the position of Director of Marketing since 1930, I was appointed to succeed him in both positions in an acting capacity, and the administration of the Marketing Branch has been carried on since with the assistance of Mr. H. S. Hunter.

Mention was made in the last Annual Report of the weakened position of organised marketing schemes because of the inability of Australian Governments, revealed by the Privy Council judgment in the James Appeal Case and uncorrected by the marketing referendum, to assist by the delegation of statutory powers to exercise jurisdiction over interstate trade, the development and efficient working of such schemes on a Commonwealth-wide basis. This defect is of most potential danger to those primary industries with an exportable surplus, such as dairy products and dried fruits, the stability of which rests upon the equalisation of prices based upon returns from local and export sales. Fortunately, the producers concerned have continued to adhere voluntarily to their respective marketing organisations, and as a consequence equalisation has been effected as hitherto.

The implications of the Privy Council judgment having been further elucidated by recent decisions of the High Court of Australia and the viewpoint thereby propounded that the States possess greater powers in relation to interstate trade than was previously supposed, the Australian Agricultural Council, at its Brisbane meeting in August, 1937, apointed a sub-committee composed of Marketing Officers of the various State Departments of Agriculture and representatives of the Dried Fruits industry, to clarify the position. As a result of the report submitted by the sub-committee, the question has received the consideration of the Marketing Officers and legal advisers of the various States, culminating in agreement at the 1938 meeting of the Council that legislative uniformity, in certain respects, be brought about by the States.

During the year under review the Marketing Branch has examined various matters connected with the marketing of farm and orchard crops, and an investigation has been conducted into the possibility of grading hides for fire brands, with the object of effecting an improvement in the value of the State's output of hides.

Some attention has been devoted also to the collection of information respecting work done in other States and countries in connection with drought ameliorative measures.

In the Annual Report for 1936, Mr. Graham referred to the desirability of effecting economies in pool board administration by, wherever practicable, amalgamating existing pools possessing certain features in common, under one board. The appointment by the Minister, in May, 1937, of the chairman of the State Wheat Board to membership and as chairman of the Canary Seed Board, has proved to be the initial move which has facilitated the further step, taken during the past year, of having this Board's affairs administered from the office of the State Wheat Board. Similar action was taken by the Barley Board, and members of the Wheat Board staff are performing the necessary duties in connection with the 1937-38 season's barley and canary seed intake. The three boards still retain their separate entities, and continue to direct the policy of their respective industries. It remains for the parties concerned to examine the possibilities of further benefits being obtainable from complete amalgamation of these activities under one board. At the moment the Canary Seed Board has under consideration the question of having its functions extended to cover *Setaria italica* (commonly known as Panicum seed) and other seeds of similar kind, in the event of the expressed desires of certain of the growers resulting in such seeds being subjected to the provisions of the Primary Producers' Organisation and Marketing Acts.

Since the principle was first introduced in 1920 of the orderly marketing of primary products by producer-controlled commodity boards under Crown supervision, the provisions of the State's marketing legislation have been extended to sixteen commodities. In not one instance have the producers concerned voted against the continuance of a commodity board when the time has arrived to determine whether an extension of its operations is to be granted or not.

The element of permanence thus imparted to the boards by the continued adherence of the growers to this form of marketing, plus the increased ability of the producers concerned to manage their own affairs as a result of practical experience in marketing matters, has prompted the offer to certain boards, the members of which were elected for terms of one year, for the extension of such term for board members to three years. The proffered extension, which was accepted in all but two cases, will not only permit of economies in the cost of board elections, but will make for stability in board administration by avoiding a too frequent disturbance of board policy.

Although the Queensland plan for the marketing of primary products has been successful to a degree which has brought it to the notice of other States and countries, and has been copied by them with modifications to suit their particular problems and conditions, we have to recognise that the existing producers' deliberative and advisory organisation has not operated with the same degree of efficiency. It has been recognised for some time that the existing organisation should be improved upon, and with the termination of the year under review, definite proposals are under consideration for an amendment to the Act to provide for the reorganisation of the Queensland Producers' Association on a commodity basis. Apart from considerations of domestic import the proposal has commending features of wider concern, such as conformity with the trend of producer organisation which emerged from the Empire Producers' Conference held recently in Sydney.

In conclusion, I desire to record appreciation of the assistance rendered by those officers of the Department who, during the past year, have deputised for the Director of Marketing on the various commodity boards.

R. WILSON,
Acting Director of Marketing.

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1938.

QUEENSLAND.

ANNUAL REPORT

OF THE

GOVERNMENT STATISTICIAN

ON

Agricultural and Dairying Production

FOR

The Year 1937

BRISBANE:
AUTHORITY: DAVID WHYTE, GOVERNMENT PRINTER.

1938.

QUEENSLAND.

Report of the Government Statistician on Agricultural and Dairying Production for the Year 1937.

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AGRICULTURAL AND DAIRYING PRODUCTION.

Table No. 1.

PROGRESS OF THE DAIRYING INDUSTRY.

Year.	Dairying Establishments, Exclusive of Factories.	Dairy Cows.				Production of Butter.	Production of Cheese.
		In Milk.	Dry.	Heifers within three months of milking.	Total.	Lb.	Lb.
1890	..	..	..	..	..	2,000,000*a*	170,240*a*
1895	..	..	..	..	..	3,719,523	1,841,799
1900	..	..	..	..	..	8,680,389	1,984,705
1905	..	..	..	..	..	20,319,976	2,682,089
1909	15,279	228,497	105,342	..	333,839	..	..
1910	16,079	262,788	102,656	..	365,444	31,258,333	4,146,661
1911	16,225	237,997	119,098	..	357,095	27,858,535	3,718,257
1912	16,579	267,847	107,813	..	375,660	30,307,339	3,947,615
1913	17,866	285,403	106,036	..	391,439	35,199,387	5,395,050
1914	18,029	288,334	98,977	..	387,311	37,230,240	7,931,869
1915	17,876	218,511	116,732	..	335,243	25,456,714	4,383,410
1916	18,410	247,855	95,456	..	343,311	28,967,279	8,495,825
1917	19,404	303,133	96,375	..	399,508	38,930,690	11,142,114
1918	19,313	255,039	126,466	..	381,505	32,371,575	8,636,700
1919	18,952	211,331	161,815	..	373,146	26,213,514	8,296,318
1920	20,457	335,026	113,608	..	448,634	40,751,373	11,412,262
1921	21,695	423,251	130,957	..	554,208	60,[illegible]	15,290,527
1922	21,931	418,351	145,332	..	563,683	[illegible]	10,[illegible],316
1923	22,019	357,203	155,326	..	512,529	40,659,634	7,221,[illegible]
1924	22,599	433,531	151,355	..	584,886	58,187,954	11,093,886
1925	22,581	463,436	147,900	..	611,426	70,748,646	14,242,721
1926	22,451	397,606	157,913	55,708	611,227	50,991,985	8,740,355
1927	22,547	436,337	139,970	69,009	645,316	62,552,917	12,233,520
1928	22,457	492,405	144,562	33,838	670,805	73,820,292	15,047,825
1929	22,763	507,100	142,477	31,000	680,577	77,483,845	13,229,337
1930	23,270	546,643	147,385	30,295	724,323	90,377,751	14,249,173
1931	24,016	590,656	152,668	31,977	775,301	100,565,158	12,261,457
1932	24,591	586,995	173,557	32,391	792,943	96,317,201	11,157,781
1933	25,363	673,544	164,978	38,887	877,409	114,032,603	13,941,728
1934	26,102	729,821	172,932	36,501	939,254	136,793,670	13,531,480
1935	26,618	732,002	186,764	36,980	955,746	119,124,711	10,018,788
1936	29,852	649,422	229,996	226,675*b*	1,106,093	87,474,757*c*	7,789,890*c*
1937	31,149	701,258	225,055	59,545	985,858	118,244,260*c*	11,963,445*c*

a Estimated. *b* *All* heifers. *c* Includes figures for factory production for year ended 30th June, following.

Value of butter, cheese and milk produced in 1936-37 £5,500,000.

Table No. 2.

1937.—CLASSIFICATION OF DAIRY ESTABLISHMENTS (NOT FACTORIES) ACCORDING TO NUMBER OF DAIRY COWS (INCLUDING HEIFERS INTENDED FOR MILKING).

Division.	Under 5.	5 to 9.	10 to 14.	15 to 19.	20 to 29.	30 to 49.	50 to 99.	100 and Upwards.	Total.
Moreton	1,385	511	699	940	1,685	2,123	1,511	317	9,180
Wide Bay	910	506	314	373	913	1,888	2,005	431	7,340
Downs	1,237	592	499	522	970	1,364	1,030	199	6,413
Maranoa	168	118	53	20	44	76	68	13	560
South-Western	28	41	24	10	11	8	1	..	123
Total South Queensland ..	3,728	1,768	1,589	1,874	3,623	5,459	4,615	960	23,616
Port Curtis	225	149	107	117	282	727	738	204	2,549
Central-Western	163	98	63	20	31	14	8	..	397
Far-Western	28	25	15	2	3	2	1	..	76
Total Central Queensland ..	416	272	185	139	316	743	747	204	3,022
Edgecumbe	1,262	506	182	77	94	80	88	18	2,307
Rockingham	1,078	197	70	38	107	287	273	37	2,087
Peninsula	4	3	1	3	2	..	..	..	13
North-Western	33	26	14	7	10	5	8	1	104
Total North Queensland ..	2,377	732	267	125	213	372	369	56	4,511
Total State	6,521	2,772	2,041	2,138	4,152	6,574	5,731	1,220	31,149

For the Petty Sessions Districts in each Division see Table No. 28.

Table No. 3.

BUTTER AND CHEESE EXPORTED OVERSEA FOR FIVE YEARS (AUSTRALIAN PRODUCE ONLY).

Year.	Butter.			Cheese.		
	Quantity Exported Oversea.	Value.	Value per lb.	Quantity Exported Oversea.	Value.	Value per lb.
	Lb.	£	s. d.	Lb.	£	s. d.
1933–34	98,084,492	3,259,804	0 8	6,635,988	145,834	0 5¼
1934–35	102,133,794	3,676,486	0 8¾	7,818,720	162,384	0 5
1935–36	76,230,350	3,811,709	1 0	3,480,608	83,176	0 5¾
1936–37	53,885,011	3,091,504	1 1¾	1,767,107	50,837	0 7
1937–38	75,061,449	4,534,924	1 2½	5,780,882	158,020	0 6½

Table No. 4.

DAIRYING INDUSTRY IN PETTY SESSIONS DISTRICTS DURING THE YEAR 1937 (a).

Division.	Total Milk Obtained.	How Utilised.						Establishments.			Dairy Cattle.			Average per Cow.	Butter Made.			Cheese Made.		
		For Butter on Farms.	For Cheese on Farms.	For Domestic Purposes by Producer.	Separated for Sale.	Sold for Consumption.	Sold to Cheese Factories.	Dairying.	Butter Factories.	Cheese Factories.	In Milk.	Dry.	Heifers.		At Factories.	By Farmers.	Total.	At Factories.	By Farmers.	Total.
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	No.	No.	No.	No.	No.	No.	Gallons.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.
Moreton Division.																				
Brisbane (North) ..	3,069,880	84,723	..	151,492	576,098	2,257,567	..	649	..	..	9,267	3,019	478	250	..	39,998	39,998	..	..	..
Brisbane (South) ..	1,035,363	20,082	..	44,047	72,132	899,102	..	197	..	..	2,960	855	182	271	..	9,374	9,374	..	..	..
Beaudesert	7,169,469	163,211	..	147,105	6,548,438	310,715	..	596	1	..	24,232	8,071	2,270	222	3,470,061	73,246	3,543,307	..	..	..
Caboolture	1,029,925	24,887	..	36,907	852,042	116,089	..	192	1	..	3,843	1,101	268	208	2,707,321	11,475	2,718,796	..	..	..
Cleveland	140,403	15,412	..	76,786	13,226	34,979	..	170	..	..	489	217	22	199	..	6,235	6,235	..	..	..
Crow's Nest	3,469,699	125,065	20	75,311	3,216,654	52,649	..	394	1	..	10,323	2,890	1,030	263	1,708,282	58,349	1,766,631	..	24	24
Dugandan	4,820,502	152,808	..	115,280	4,498,113	54,301	..	622	1	..	14,543	3,555	983	266	3,490,764	70,555	3,561,319	..	..	..
Esk	1,025,928	40,960	..	32,960	887,199	64,809	..	179	1	..	4,279	1,564	382	182	1,941,601	20,361	1,961,962	..	..	..
Gatton	2,639,586	129,519	..	115,964	2,365,050	27,553	1,500	498	2	..	8,463	2,152	545	249	2,419,865	63,419	2,483,284	1,760b	..	1,760
Harrisville	2,472,537	94,724	..	69,681	2,145,811	162,321	..	393	..	..	8,529	2,369	815	227	..	45,415	45,415	..	..	..
Ipswich	1,109,195	40,032	..	61,556	777,784	229,823	..	230	1	..	4,064	1,581	303	196	3,394,572	18,145	3,412,717	..	..	..
Kilcoy	1,704,426	50,159	..	28,752	1,618,051	7,464	..	139	..	..	6,265	2,262	658	200	..	24,393	24,393	..	..	..
Laidley	2,270,874	94,116	..	94,855	2,065,923	15,980	..	415	1	..	6,932	2,023	434	254	1,619,865	45,538	1,665,403	..	..	..
Logan	1,974,361	88,918	..	86,103	1,576,772	222,568	..	491	1	..	8,113	2,578	478	185	5,917,352	42,376	5,959,728	..	..	..
Lowood	1,427,274	54,874	..	66,191	1,273,516	32,693	..	293	1	..	4,980	1,540	646	219	591,503	27,153	618,656	..	..	..
Marburg	1,295,288	49,720	..	46,520	1,144,994	54,054	..	238	..	..	4,073	1,331	69	240	..	22,888	22,888	..	..	..
Maroochy	7,085,497	257,102	..	261,239	6,336,608	230,548	..	1,209	2	..	23,281	5,636	1,392	245	4,526,121	124,478	4,650,599	..	..	..
Redcliffe	2,636,814	43,757	..	81,390	935,784	1,575,883	..	349	1	..	9,802	3,160	600	203	387,981	21,203	409,184	..	..	..
Rosewood	2,184,903	72,827	..	59,300	1,851,788	200,988	..	344	..	..	7,550	2,298	460	222	..	35,403	35,403	..	..	..
Southport	5,558,628	124,774	..	115,283	4,667,072	651,499	..	504	..	..	20,615	4,701	1,306	220	..	60,185	60,185	..	..	..
Toogoolawah ..	2,682,344	80,332	..	75,591	2,458,899	67,522	..	324	..	..	9,790	3,375	940	204	..	39,419	39,419	..	..	..
Woodford	3,716,754	75,764	..	67,325	3,374,572	199,093	..	268	1	..	11,503	2,955	737	257	1,965,331	37,621	2,002,952	..	..	..
Wynnum	194,186	8,370	..	20,772	3,770	161,274	..	84	..	..	709	254	28	202	..	3,238	3,238	..	..	..
Oakey–Cooyar ..	1,309,706	49,412	..	35,037	1,204,726	20,531	..	130	..	..	3,897	1,442	428	245	..	22,881	22,881	..	..	..
Toowoomba–Helidon	2,138,664	68,447	..	51,634	2,001,612	16,971	..	272	..	..	5,905	1,629	505	284	..	33,879	33,879	..	..	..
Total, Moreton ..	64,162,206	2,009,995	20	2,017,081	52,466,634	7,666,976	1,500	9,180	15	..	214,407	62,358	15,959	232	34,140,619	957,227	35,097,846	1,760	24	1,784
Wide Bay Division.																				
Biggenden	4,160,754	106,454	..	70,441	3,667,859	11,555	304,445	364	1	2	15,478	4,222	1,411	211	2,423,156	50,386	2,473,542	350,842	..	350,842
Bundaberg	3,221,340	265,138	..	248,329	2,522,546	185,327	..	883	1	..	11,758	5,707	1,123	184	1,724,320	123,607	1,847,927	..	..	..
Childers	381,994	45,098	81	57,314	267,140	12,361	..	206	..	..	1,714	840	192	150	..	20,880	20,880	..	81	81
Eidsvold	1,424,241	50,505	..	37,189	1,303,852	32,695	..	177	..	..	5,698	1,935	701	187	..	23,682	23,682	..	..	..
Gayndah	5,968,673	144,371	..	141,844	5,639,728	42,730	..	600	2	..	21,073	8,269	2,319	203	4,877,651	68,015	4,945,666	..	..	..
Gin Gin	892,809	111,705	50	65,016	711,560	4,478	..	298	..	..	4,647	2,301	588	128	..	47,413	47,413	..	50	50
Gympie	16,361,471	359,292	..	344,499	15,469,744	187,936	..	1,585	4	..	57,622	16,472	3,821	221	10,399,555	173,486	10,573,041	..	..	..
Kilkivan	1,342,834	41,238	..	32,245	1,235,129	34,222	..	143	..	..	5,082	1,772	461	196	..	19,185	19,185	..	..	..
Maryborough ..	1,523,941	123,151	..	108,004	1,079,172	213,614	..	503	1	..	6,796	2,853	615	158	1,160,495	54,785	1,215,280	..	..	..
Mount Perry ..	128,621	18,336	..	12,526	94,092	3,667	..	61	..	..	876	475	249	95	..	8,297	8,297	..	..	..
Nanango	9,506,217	278,588	..	237,085	8,929,764	60,780	..	965	2	..	28,816	9,781	2,403	246	7,092,537	132,122	7,224,659	..	..	..
Tiaro	2,697,524	113,599	1,890	82,938	2,473,224	25,873	..	372	..	..	10,397	3,851	1,081	189	..	65,816	65,816	..	1,890	1,890
Wienholt	14,170,105	364,953	..	276,537	13,477,656	50,959	..	1,183	3	..	42,634	12,303	2,578	258	7,914,148	175,503	8,089,651	..	..	..
Total, Wide Bay ..	61,780,524	2,022,428	2,021	1,713,967	56,871,466	866,197	304,445	7,340	14	2	212,591	70,781	17,542	218	35,591,862	963,177	36,555,039	350,842	2,021	352,863
Downs Division.																				
Allora..	2,317,784	76,913	..	84,164	1,975,358	29,466	151,883	328	1	2	5,409	1,108	497	356	1,254,091	31,907	1,285,998	172,161	..	172,161
Chinchilla	3,592,487	84,945	..	86,049	3,401,975	19,518	..	377	1	..	13,149	4,080	1,922	209	2,149,078	38,322	2,187,400	..	..	..
Clifton	3,808,298	133,470	..	104,928	3,070,468	35,781	463,651	514	1	4	8,526	1,535	608	379	1,281,062	63,210	1,344,272	488,493	..	488,493
Condamine	1,554,401	59,789	..	52,454	1,419,058	23,100	..	256	1	..	6,301	2,192	554	183	1,031,632	27,714	1,059,346	..	..	..
Dalby..	10,336,505	247,764	..	281,313	8,736,795	52,884	1,017,749	918	2	5	30,286	8,933	2,954	264	5,707,159	112,669	5,819,828	1,544,545	..	1,544,545
Goondiwindi ..	250,171	40,111	..	53,603	140,878	15,579	..	116	1	..	1,046	588	139	153	28,868	17,780	46,648	..	..	..
Inglewood	1,162,036	38,865	..	41,194	1,055,544	26,433	..	155	..	..	3,514	1,247	327	244	..	17,592	17,592	..	..	..
Killarney	1,733,837	70,686	..	44,214	1,531,291	20,449	67,197	215	1	..	4,002	1,093	320	340	1,393,570	29,196	1,422,766	..	..	..
Oakey	10,577,487	207,844	7,300	187,932	7,909,298	72,835	2,192,278	912	2	15	27,551	7,629	1,787	301	6,237,652	101,080	6,338,732	2,963,514	7,300	2,970,814
Pittsworth	7,110,640	146,451	..	172,828	4,098,807	15,748	2,676,806	647	1	12	16,679	3,761	1,320	348	1,246,262	68,493	1,314,755	4,123,976	..	4,123,976
Stanthorpe	338,357	69,770	50	154,526	98,817	15,194	..	541	..	..	1,299	683	84	171	..	32,406	32,406	..	50	50
Texas	494,441	15,186	..	24,110	444,308	10,837	..	88	1	..	1,715	492	109	224	268,708	5,984	274,692	..	..	..
Toowoomba	4,908,922	154,450	..	149,981	3,090,163	311,685	1,202,643	654	1	9	11,760	2,580	1,057	342	4,600,951	74,028	4,674,979	1,833,379	..	1,833,379
Warwick	3,827,481	162,649		146,153	3,116,530	95,700	306,449	692	1	4	10,230	2,745	857	295	2,695,316	78,174	2,773,490	463,555	..	463,555

Division.	Total Milk Obtained.	How Utilised.						Establishments.			Dairy Cattle.				Butter Made.			Cheese Made.		
		For Butter on Farms.	For Cheese on Farms.	For Domestic Purposes by Producer.	Separated for Sale.	Sold for Consumption.	Sold to Cheese Factories.	Dairying.	Butter Factories.	Cheese Factories.	In Milk.	Dry.	Heifers.	Average per Cow.	At Factories.	By Farmers.	Total.	At Factories.	By Farmers.	Total.
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	No.	No.	No.	No.	No.	No.	Gallons.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.
Maranoa Division.																				
Roma	1,540,091	100,189	..	102,785	1,302,171	34,946	..	355	1	..	6,187	2,638	606	175	768,506	42,559	811,065	..	..	..
Other	238,917	34,967	..	70,187	94,651	39,112	..	205	..	..	1,698	884	197	93	..	12,180	12,180	..	..	..
Total, Maranoa ..	1,779,008	135,156	..	172,972	1,396,822	74,058	..	560	1	..	7,885	3,522	803	156	768,506	54,739	823,245	..	..	..
Total South-Western	134,285	13,454	..	69,598	1,120	50,113	..	123	..	..	785	518	70	103	..	3,984	3,984	..	..	..
Total South Queensland	*179,868,870*	*5,689,926*	*9,391*	*5,557,067*	*150,825,332*	*9,402,553*	*8,384,601*	*23,616*	*44*	*53*	*577,135*	*175,845*	*46,909*	*239*	*98,395,336*	*2,677,682*	*101,073,018*	*11,942,225*	*9,395*	*11,951,620*
Port Curtis Division.																				
Banana	326,076	14,240	..	15,488	290,623	5,725	..	76	..	..	1,218	439	176	197	..	5,554	5,554	..	..	..
Gladstone	4,702,368	172,871	..	109,814	4,345,938	73,745	..	545	1	..	19,368	6,668	1,805	181	2,298,790	80,294	2,379,084	..	..	..
Monto	5,357,515	116,704	..	92,082	5,129,994	18,735	..	444	1	..	18,539	5,630	1,523	222	3,534,338	56,162	3,590,500	..	..	..
Mount Morgan ..	6,661,187	153,339	..	152,336	6,202,119	153,393	..	741	2	..	22,907	8,125	2,098	215	3,889,761	73,002	3,962,763	..	..	..
Rockhampton ..	4,181,654	202,483	..	180,257	3,424,065	374,849	..	669	1	..	16,203	7,584	2,185	176	1,623,512	91,724	1,715,236	..	..	..
St. Lawrence ..	42,259	11,659	..	16,576	8,234	5,790	..	33	..	..	243	150	60	108	..	4,789	4,789	..	..	..
Taroom	98,252	12,940	..	11,372	73,940	..	..	41	..	..	375	93	13	210	..	5,219	5,219	..	..	..
Total Port Curtis	21,369,311	684,236	..	577,925	19,474,913	632,237	..	2,549	5	..	78,853	28,689	7,860	199	11,346,401	316,744	11,663,145	..	..	..
Total Central-Western	395,687	80,086	..	195,689	..	119,912	..	397	..	..	2,507	1,181	218	107	..	26,832	26,832	..	..	..
Total Far Western ..	61,802	8,362	..	44,275	..	9,165	..	76	..	..	325	288	36	101	..	2,582	2,582	..	..	..
Total Cent. Queensland	*21,826,800*	*772,684*	..	*817,889*	*19,474,913*	*761,314*	..	*3,022*	*5*	..	*81,685*	*30,158*	*8,114*	*195*	*11,346,401*	*346,158*	*11,692,559*	..	..	..
Edgecumbe Division.																				
Ayr	187,609	7,448	..	100,149	3,030	76,982	..	317	..	..	941	579	140	123	..	3,458	3,458	..	..	..
Bowen	112,190	26,337	..	39,856	17,217	28,780	..	142	..	..	600	526	123	100	..	11,375	11,375	..	..	..
Cape River	13,928	9,415	..	4,513	..	..	..	11	..	..	78	66	61	97	..	4,401	4,401	..	..	..
Charters Towers ..	114,051	24,000	..	15,763	..	74,288	..	54	..	..	614	277	89	128	..	11,799	11,799	..	..	..
Collinsville	24,880	2,355	..	5,993	..	16,532	..	11	..	..	102	88	26	131	..	916	916	..	..	..
Mackay	1,668,775	256,248	50	467,372	698,417	246,688	..	1,440	1	..	8,461	5,494	1,166	120	529,543	113,438	642,981	..	30	30
Proserpine	160,031	27,166	100	60,318	54,488	17,959	..	215	..	..	987	517	80	106	..	12,266	12,266	..	95	95
Ravenswood ..	5,435	2,507	..	2,928	..	..	..	13	..	..	44	5	4	111	..	1,024	1,024	..	..	..
Townsville	350,634	15,746	..	28,819	5,050	301,019	..	104	..	..	1,419	829	271	156	..	6,909	6,909	..	..	..
Tota Edgecumbe..	2,637,533	371,222	150	725,711	778,202	762,248	..	2,307	1	..	13,246	8,381	1,960	122	529,543	165,586	695,129	..	125	125
Rockingham Division.																				
Atherton	7,309,481	157,755	11,725	180,630	6,772,365	187,006	..	622	2	..	19,319	5,735	1,373	292	3,906,749	72,959	3,979,708	..	11,650	11,650
Cairns	367,788	7,407	50	107,514	37,465	215,352	..	340	..	..	1,468	814	144	161	..	3,160	3,160	..	50	50
Cardwell	105,168	4,197	..	59,346	20,309	21,316	..	148	..	..	401	270	64	157	..	1,809	1,809	..	..	..
Chillagoe	2,140	1,150	..	990	..	..	..	4	..	..	34	3	1	58	..	390	390	..	..	..
Douglas	393,612	5,785	..	33,072	335,685	19,070	..	98	1	..	1,045	542	112	248	172,398	2,738	175,136	..	..	..
Herberton	975,198	30,348	..	32,322	893,497	19,031	..	111	1	..	2,787	734	177	277	453,699	13,307	467,006	..	..	..
Ingham	173,205	14,782	..	91,503	31,975	34,945	..	239	1	..	750	461	115	143	3,720	6,248	9,968	..	..	..
Innisfail	300,959	10,692	..	133,591	82,802	73,874	..	424	1	..	1,444	789	198	135	53,623	4,751	58,374	..	..	..
Mareeba	331,347	8,363	..	31,191	269,858	21,935	..	101	1	..	950	728	195	197	79,752	3,887	83,639	..	..	..
Total Rockingham	9,958,898	240,479	11,775	670,159	8,443,956	592,529	..	2,087	7	..	28,198	10,076	2,379	260	4,669,941	109,249	4,779,190	..	11,700	11,700
Total Peninsula ..	11,286	1,770	..	4,590	..	4,926	..	13	..	..	96	31	20	89	..	419	419	..	..	..
Total North-Western	115,478	13,981	..	44,094	..	57,403	..	104	..	..	898	564	163	79	..	3,945	3,945	..	..	..
Total North Queensland	*12,723,195*	*627,452*	*11,925*	*1,444,554*	*9,222,158*	*1,417,106*	..	*4,511*	*8*	..	*42,438*	*19,052*	*4,522*	*207*	*5,199,484*	*279,199*	*5,478,683*	..	*11,825*	*11,825*
Grand Total, 1937 ..	214,418,865	7,090,062	21,316	7,819,510	179,522,403	11,580,973	8,384,601	31,149	57	53	701,258	225,055	59,545	231	114,941,221	3,303,039	118,244,260	11,942,225	21,220	11,963,445
Grand Total, 1936 ..	191,647,291	6,953,008	18,092	7,561,232	158,714,228	10,106,317	8,294,414	29,852	57	54	649,422	229,996	c	218	84,401,372	3,073,385	87,474,757	7,771,926	17,964	7,789,890
Increase, 1937 ..	22,771,574	137,054	3,224	258,278	20,808,175	1,474,656	90,187	1,297	..	..	51,836	..	..	13	30,539,849	229,654	30,769,503	4,170,299	3,256	4,173,555
Decrease, 1937 ..	..	..	..	..	..	..	..	..	..	1	..	4,941	..	..	..	..	..	..	..	..

a The figures for factory production are for the year ended 30th June, 1938, and are complete. The rest of the table is compiled from returns sent in by farmers for the year 1937, and may be somewhat incomplete.

b Produced at a butterfactory.

c Not available on a comparable basis.

NOTE.—For names of Petty Sessions Districts in those Divisions where they are not specified *see* Table No. 28.

Table No. 5.

ACREAGE AND VALUE OF ALL AGRICULTURAL CROPS FOR THE YEARS 1936 AND 1937.

—	1936.		1937.	
	Acres.	Value.	Acres.	Value.
		£		£
Grain crops	479,525	1,306,614	563,544	1,518,330
Green forage	429,782	967,000	441,560	1,177,000
Hay and straw	62,758	459,480	73,629	628,714
Root crops	19,812	277,168	17,778	244,805
Sugar-cane	338,686	8,297,838	348,840	8,917,730
Fruit (including Vines)	31,635	937,277	34,104	1,083,671
All other	144,225	1,311,623	139,283	1,361,017
Total	1,506,423	13,557,000	1,618,738	14,931,267

Table No. 6.

IRRIGATION—AREA AND PRINCIPAL CROPS IRRIGATED DURING THE YEAR 1937.

Division and Petty Sessions District.	Number of Irrigators.	Total Area Irrigated.	Principal Crops Irrigated.					
			Sugar-cane.	Fruit and Vegetables.	Cotton.	Tobacco.	Fodder Crops.	Grain.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Moreton.								
Brisbane North	78	297	..	236	..	..	61	..
Brisbane South	70	324	..	316	..	..	8	..
Beaudesert	22	187	..	17	..	..	170	..
Cleveland	157	905	..	905	..	..	..	..
Dugandan	72	839	..	394	..	..	434	11
Gatton	81	1,070	..	495	..	..	547	28
Harrisville	33	551	..	21	..	..	513	17
Ipswich	14	116	..	16	..	..	100	..
Laidley	45	853	..	111	..	..	742	..
Logan	21	154	..	152	..	..	2	..
Lowood	35	577	..	369	..	..	208	..
Rosewood	16	142	..	25	..	..	100	17
Toogoolawah	20	333	..	57	..	..	236	40
Wynnum	18	79	..	77	..	..	2	..
Toowoomba-Helidon	24	221	..	113	..	..	108	..
All Other Districts	47	203*a*	..	80	..	..	101	14
Total, Moreton	753	6,851*a*	..	3,384	..	..	3,332	127
Wide Bay.								
Bundaberg	66	4,269	4,192	46	..	3	28	..
Eidsvold	4	130	..	109	..	..	21	..
Gayndah	22	249	..	228	..	..	16	5
Gympie	17	82	..	34	..	..	48	..
Maryborough	11	75	..	75	..	..	..	..
Tiaro	8	104	38	46	..	..	20	..
Wienholt	36	422	..	76	..	..	321	25
All Other Districts	18	98	32	28	..	..	38	..
Total, Wide Bay	182	5,429	4,262	642	..	3	492	30
Downs.								
Condamine	3	102	..	2	..	..	100	..
Goondiwindi	5	83	..	61	..	..	22	..
Inglewood	12	372	..	4	..	361	7	..
Stanthorpe	12	101	..	61	..	5	35	..
Texas	19	443	..	5	..	246	184	8
All Other Districts	38	110	..	53	..	..	57	..
Total, Downs	89	1,211	..	186	..	612	405	8
Maranoa	11	37	..	35	..	..	2	..
South-West	14	44	..	44	..	..	..	..
Port Curtis .								
Banana	22	493	..	28	213	..	145	107
Gladstone	16	137	..	89	2	13	31	2
Mount Morgan	24	149	..	83	16	..	10	40
Rockhampton	74	475	..	330	..	..	145	..
All Other Districts	3	7	..	7	..	..	..	..
Total, Port Curtis	139	1,261	..	537	231	13	331	149
Central West	25	106	..	85	..	..	21	..
Far West	5	25	..	25	..	..	..	..
Edgecumbe								
Ayr	580	29,577	29,494	20	6	4	50	3
Bowen	139	1,118	64	943	..	35	76	..
Cape River	10	55	..	55	..	..	..	..
Charters Towers	31	118	..	106	..	..	12	..
Mackay	51	1,992	1,988	4	..	..	..	..
Proserpine	6	171	171	..	..	..	..	..
Townsville	30	180	27	109	..	..	44	..
All Other Districts	7	26	..	14	..	10	2	..
Total, Edgecumbe	854	33,237	31,744	1,251	6	49	184	3
Rockingham.								
Atherton	11	176	..	23	..	..	13	140
Ingham	7	218	158	60	..	..	..	..
Mareeba	64	432	..	46	..	379	7	..
All Other Districts	18	62	7	48	..	4	3	..
Total, Rockingham	100	888	165	177	..	383	23	140
Peninsula	1	*	..	*	..	..	..	..
North West	11	65	..	65	..	..	..	..
TOTAL, STATE 1937	2,184	49,154*a*	36,171	6,431	237	1,060	4,790	457
TOTAL, STATE 1936	2,047	44,509*b*	34,137*b*	5,630	460	1,033	3,099	150

a Including 8 acres Arrowroot.　　*b* Amended.　　*Less than ½ acre.

Table No. 7.
IRRIGATION—RETURN FOR 10 YEARS.

Year.	Acres Irrigated.	Year.	Acres Irrigated.
1928	25,344	1933	29,363
1929	26,282	1934	34,138
1930	26,947	1935	36,486 *b*
1931	28,414	1936	44,509 *b*
1932	31,409	1937	49,154

b Amended.

Table No. 8.
WHEAT.—AREA AND PRODUCE OF WHEAT FOR GRAIN IN PETTY SESSIONS DISTRICTS.

Divisions and Petty Sessions Districts.	1935.			1936.			1937.		
	Area.	Produce.	Average per Acre.	Area.	Produce.	Average per Acre.	Area.	Produce.	Average per Acre.
MORETON.	Acres.	Bushels.	Bushels.	Acres.	Bushels.	Bushels.	Acres.	Bushels.	Bushels
Brisbane	..	..	..	20	9	0·45	8	..	..
Beaudesert	..	..	..	..	..	..	22	20	0·91
Caboolture	..	..	..	12	20	1·67	..	..	..
Crow's Nest	204	3,228	15·82	185	1,506	8·14	926	8,822	9·53
Dugandan	14	188	13·43	109	805	7·38	130	626	4·82
Gatton	53	378	7·13	293	365	1·25	184	290	1·58
Harrisville	120	1,893	15·78	104	420	4·04	59	..	..
Laidley	27	363	13·44	180	1,695	9·42	25	40	1·60
Rosewood	..	..	..	..	..	..	41	291	7·10
Toogoolawah	..	..	..	5	120	24·00	10	..	..
Oakey–Cooyar	104	723	6·95	250	726	2·90	334	4,183	12·52
Toowoomba–Helidon	..	..	..	76	105	1·38	1	9	9·00
All Other Districts	..	..	..	6	40	6·67	21	6	0·29
Total, Moreton	522	6,773	12·98	1,240	5,811	4·69	1,761	14,287	8·11
WIDE BAY.									
Biggenden	..	..	..	15	..	..	..	..	..
Eidsvold	..	..	..	21	..	..	7	..	..
Gayndah	..	..	..	32	..	..	91	390	4·29
Gympie	..	..	..	15	..	..	..	..	..
Kilkivan	..	..	..	38	170	4·47	..	..	..
Mount Perry	..	..	..	12	..	..	..	..	..
Nanango	187	2,637	14·10	300	662	2·21	1,096	6,199	5·66
Wienholt	182	1,563	8·59	261	2,007	7·69	376	2,248	5·98
All Other Districts	..	..	..	3	..	..	9	..	..
Total, Wide Bay	369	4,200	11·38	697	2,839	4·07	1,579	8,837	5·60
DOWNS.									
Allora	18,799	218,390	11·62	22,786	203,802	8·95	30,450	480,148	15·77
Chinchilla	19	341	17·95	842	5,211	6·19	1,844	10,562	5·73
Clifton	31,763	274,351	8·64	36,287	253,923	6·99	48,180	434,527	9·02
Condamine	877	7,194	8·20	1,279	7,446	5·82	960	6,610	6·89
Dalby	19,330	287,815	14·89	28,638	215,248	7·52	48,924	748,643	15·30
Goondiwindi	26	396	15·23	378	830	2·20	16	60	3·75
Inglewood	883	4,752	5·38	1,151	2,539	2·21	919	5,209	5·67
Killarney	6,891	92,732	13·46	7,251	60,353	8·32	9,805	109,122	11·13
Oakey	46,097	698,949	15·16	52,439	361,692	6·90	67,786	602,073	8·88
Pittsworth	65.470	625,198	9·55	75,650	549,004	7·25	86,612	643,854	7·43
Stanthorpe	..	..	..	8	..	..	..	..	..
Texas	210	3,379	11·33	474	1,518	3·20	305	1,320	4·33
Toowoomba	8,422	102,923	12·22	10,928	67,439	6·17	18,572	165,471	8·91
Warwick	16,643	182,504	10·97	19,349	95,957	4·96	28,763	381,731	13·27
Total, Downs	215,430	2,497,924	11·60	257,460	1,824,962	7·09	343,136	3,589,330	10·46
MARANOA.									
Mitchell	1,704	6,744	3·96	1,779	3,100	1·74	1,200	444	0·37
Roma	20,668	160,877	7·78	21,173	166,468	7·86	21,580	118,169	5·48
All Other Districts	..	..	..	5	..	..	2	..	..
Total, Maranoa	22,372	167,621	7·49	22,957	169,568	7·39	22,782	118,613	5·21
PORT CURTIS.									
Banana	578	7,954	13·76	702	7,918	11·28	1,647	9,990	6·07
Gladstone	..	..	..	15	..	..	9	5	0·56
Monto	..	..	..	101	300	2·97	46	1,188	25·83
Mont Morgan	360	5,844	16·23	460	4,530	9·85	1,952	7,155	3·67
Rockhampton	..	..	..	16	308	19·25	3	38	12·67
Total, Port Curtis	938	13,798	14·71	1,294	13,056	10·09	3,657	18,376	5·02
ROCKINGHAM.									
Herberton	..	..	..	..	..	..	12	..	..
All Other Districts	..	..	..	..	..	..	8	..	..
Total, Rockingham..	..	..	..	..	..	..	20	..	..
Total, State	239,631	2,690,316	11·23	283,648	2,016,236	7·11	372,935*a*	3,749,443	10·05

a Including 75,528 acres which failed to bear a crop.

Table No. 9.
WHEAT TREATED IN QUEENSLAND FLOUR MILLS DURING THE YEARS 1935–36 AND 1936–37.

Year.	Flour Mills.	Workers. *a*	Wheat Treated.	FLOUR MADE.		MEAL MADE.		BRAN AND POLLARD.	
				Tons.	Value.	Tons.	Value.	Bushels.	Value.
	No.	No.	Bushels.		£		£		£
1935–36	10	352	4,163,449	86,142	857,399	3,430	34,177	3,533,254	223,908
1936–37	10	347	3,957,385	82,423	1,047,409	4,041	50,222	3,322,334	248,810

a Average over whole year.

Table No. 10.

MAIZE.—AREA AND PRODUCE OF MAIZE FOR GRAIN IN PETTY SESSIONS DISTRICTS.

Divisions and Petty Sessions Districts.	1935.				1936.				1937.			
	No. of Growers.	Area.	Produce.	Average per Acre.	No. of Growers.	Area.	Produce.	Average per Acre.	No. of Growers.	Area.	Produce.	Average per Acre.
MORETON.		Acres.	Bushels.	Bushels.		Acres.	Bushels.	Bushels.		Acres.	Bushels.	Bushels.
Brisbane (North)	30	81	3,347	41·32	60	174	3,747	21·53	52	154	2,482	16·12
Brisbane (South)	3	39	838	21·49	2	6	90	15·00	5	22	162	7·36
Beaudesert	[illegible]	4,476	122,112	27·28	271	3,822	76,419	19·99	383	3,736	69,377	18·57
Caboolture	11	30	774	25·80	23	72	1,564	21·72	29	77	1,915	24·87
Cleveland	2	4	122	30·50	3	9	60	6·67	3	2	65	32·50
Crow's Nest	356	6,319	160,080	25·33	312	6,127	102,669	16·76	284	5,297	35,117	6·63
Dugandan	[illegible]	7,006	169,604	24·21	449	5,571	96,141	17·26	429	5,108	71,749	14·05
Esk	93	1,031	18,775	18·21	96	944	12,303	13·03	105	1,181	16,045	13·59
Gatton	341	4,824	88,714	18·39	383	5,202	72,921	14·02	337	4,608	30,344	6·59
Harrisville	[illegible]	3,943	87,917	22·30	295	3,161	49,060	15·52	269	2,652	25,206	9·50
Ipswich	113	648	13,990	21·59	88	688	13,071	18·93	85	458	5,614	12·26
Kilcoy	100	814	20,597	25·30	105	795	18,070	22·73	101	737	15,093	20·48
Laidley	[illegible]	6,011	138,933	23·11	342	5,790	101,095	17·46	329	5,298	35,755	6·75
Logan	160	376	9,076	24·14	179	423	8,507	20·11	209	510	9,718	19·05
Lowood	254	3,500	92,428	26·41	220	3,635	43,252	11·90	202	2,185	25,688	11·76
Marburg	219	2,078	30,269	14·57	176	1,500	20,493	13·66	177	1,225	15,134	12·35
Maroochy	90	283	7,114	25·14	135	507	12,936	25·52	128	412	11,724	28·46
Redcliffe	36	174	5,638	32·40	51	192	5,041	26·25	69	258	5,662	21·95
Rosewood	264	2,601	41,937	16·12	221	2,028	29,959	14·77	253	2,308	26,445	11·46
Southport	163	555	16,545	29·81	146	560	15,175	27·10	124	650	18,486	28·44
Toogoolawah	224	2,979	73,582	24·70	210	2,566	41,151	16·04	250	3,471	62,447	17·99
Woodford	58	528	14,080	26·67	52	271	6,197	22·87	83	597	14,101	23·62
Wynnum	1	1	20	20·00	1	1	..	..	1	1	18	18·00
Oakey–Cooyar	100	1,238	30,972	25·02	107	1,559	26,857	17·23	88	1,134	6,685	5·90
Toowoomba–Helidon ..	169	1,074	18,467	17·19	153	1,047	12,434	11·87	155	1,129	12,044	10·67
Total, Moreton ..	4,546	50,613	1,165,931	23·04	4,080	46,650	769,212	16·49	4,150	43,210	517,076	11·97
WIDE BAY												
Biggenden	110	411	10,613	25·82	142	733	10,439	14·24	185	944	12,348	13·08
Bundaberg	95	294	6,578	22·37	107	345	5,063	14·68	155	569	11,839	20·81
Childers	5	18	301	16·72	13	45	672	14·93	12	55	851	15·47
Eidsvold	48	274	2,857	10·43	53	440	2,009	4·57	54	592	2,773	4·68
Gayndah	190	1,657	29,819	18·00	223	2,393	18,470	7·72	223	2,410	20,039	8·31
Gin Gin	54	168	3,412	20·31	69	347	3,997	11·52	93	397	5,761	14·51
Gympie	190	1,300	48,787	37·53	374	2,002	56,603	28·27	453	2,510	59,492	23·70
Kilkivan	34	260	7,205	27·71	42	359	5,499	15·32	50	395	3,877	9·82
Maryborough	40	81	1,807	22·31	53	119	2,026	17·03	60	142	3,253	22·91
Mount Perry	11	20	436	21·80	13	28	269	9·61	11	31	452	14·58
Nanango	627	14,103	351,285	24·91	740	20,101	381,890	19·00	599	18,583	118,488	6·38
Tiaro	82	345	8,221	23·83	96	353	6,523	18·48	87	468	7,885	16·85
Wienholt	758	15,405	360,195	23·38	863	20,323	375,471	18·47	908	23,626	347,621	14·71
Total, Wide Bay ..	2,244	34,336	831,516	24·22	2,788	47,588	868,931	18·26	2,890	50,722	594,679	11·72
DOWNS.												
Allora	211	5,558	115,916	20·86	229	7,660	115,603	15·09	236	6,834	85,462	12·51
Chinchilla	6	80	1,284	16·05	27	350	1,310	3·74	62	700	3,666	5·24
Clifton	310	9,339	176,325	18·88	348	12,372	182,325	14·74	280	9,380	77,712	8·28
Condamine	5	69	1,170	16·96	8	90	1,253	13·92	13	123	1,510	12·28
Dalby	123	1,207	23,876	19·78	117	1,835	9,272	5·05	108	1,431	12,683	8·86
Goondiwindi	1	5	100	20·00	3	12	80	6·67	2	6	48	8·00
Inglewood	16	213	2,150	10·09	11	223	333	1·49	17	133	670	5·04
Killarney	157	5,926	136,480	23·03	161	7,011	99,937	14·25	186	7,081	99,846	14·10
Oakey	452	7,370	160,725	21·81	363	7,856	75,292	9·58	277	5,913	21,231	3·59
Pittsworth	154	3,020	40,703	13·48	114	2,578	20,862	8·09	108	2,062	11,087	5·38
Stanthorpe	16	60	1,017	16·95	46	174	1,926	11·07	59	153	2,207	14·42
Texas	15	113	1,824	16·14	12	93	320	3·44	20	178	2,060	11·57
Toowoomba	334	4,824	101,762	21·09	333	6,068	80,458	13·26	232	3,413	19,134	5·61
Warwick	359	12,345	242,004	19·60	328	14,184	129,695	9·14	325	11,453	89,679	7·83
Total, Downs ..	2,159	50,129	1,005,336	20·05	2,100	60,506	718,666	11·88	1,925	48,860	426,995	8·74
MARANOA	18	108	651	6·03	17	86	503	5·85	13	70	831	11·87
PORT CURTIS.												
Banana	..	..	..	..	3	18	150	8·33	4	152	1,383	9·10
Gladstone	138	834	17,705	21·23	143	938	15,827	16·87	152	1,136	20,716	18·24
Monto	129	1,056	18,238	17·27	182	2,030	27,992	13·79	208	2,836	40,427	14·25
Mount Morgan	39	272	3,024	11·12	140	1,396	20,542	14·71	172	2,327	18,126	7·79
Rockhampton	125	806	12,909	16·02	143	775	13,278	17·14	152	1,251	18,341	14·66
St. Lawrence	5	12	114	9·50	8	33	719	21·79	5	21	450	21·43
Taroom	..	..	..	..	4	22	290	13·18	3	29	165	5·69
Total, Port Curtis ..	436	2,980	51,990	17·45	623	5,212	78,798	15·12	696	7,752	99,608	12·85
CENTRAL WESTERN ..	..	..	..	..	7	32	184	5·75	3	7	44	6·29
EDGECUMBE	32	138	959	6·95	74	193	2,158	11·18	67	173	2,981	17·23
ROCKINGHAM.												
Atherton	324	18,665	438,891	23·51	349	20,397	697,020	34·17	370	22,410	960,637	42·87
All Other Districts ..	52	360	7,741	21·50	69	468	11,387	24·33	89	983	24,108	24·52
Total, Rockingham ..	376	19,025	446,632	23·48	418	20,865	708,407	33·95	459	23,393	984,745	42·10
PENINSULA	7	41	1,030	25·12	8	50	995	19·90	10	54	1,469	27·20
NORTH WESTERN ..	..	..	..	..	6	84	960	11·43	1	2	30	15·00
Total, State	9,818	157,370	3,504,045	22·27	10,121	181,266	3,148,814	17·37	10,214	174,243	2,628,458	15·09

Table No. 11.

BARLEY.—Area and Produce in Petty Sessions Districts.

Petty Sessions District.	Malting Grain.				Other Varieties Grain.			
	Acres.		Bushels.		Acres.		Bushels.	
	1936.	1937.	1936.	1937.	1936.	1937.	1936.	1937.
Allora	405	429	2,883	6,758	222	457	1,202	7,553
Atherton	10	40	400	400	..	..	..	..
Clifton	1,039	2,440	7,465	38,349	369	363	3,343	5,546
Crow's Nest ..	10	80	..	1,709	36	110	31	2,203
Dalby	329	320	1,800	3,453	164	128	300	2,341
Dugandan	..	8	..	120	..	3	..	42
Inglewood	8	7	..	30	31	10	195	30
Killarney	25	80	48	364	120	158	132	1,695
Monto	..	..	..	..	3	10	100	30
Mount Morgan ..	20	..	..	..	1	10	2	27
Nanango	..	18	..	135	14	4	109	90
Oakey { Cooyar ..	10	17	..	375	..	53	..	1,029
Oakey { Oakey ..	359	560	2,689	5,629	207	333	2,096	4,157
Pittsworth	685	613	5,442	7,929	693	260	281	2,698
Texas	..	..	..	..	96	60	300	720
Toowoomba ..	673	894	3,891	14,706	134	253	438	2,883
Warwick	707	400	2,622	4,571	231	434	1,517	4,509
Wienholt	6	..	..	..	..	86	..	870
All Other Districts	33	17	62	70	12	..	32	..
Total, State ..	4,319	5,923	27,302	84,598	2,333	2,732	10,076	36,423

Table No. 12.

COTTON—Area and Produce in Petty Sessions Districts.

Petty Sessions District.	Area.					Produce (Seed Cotton).				
	1933.	1934.	1935.	1936.	1937.	1933.	1934.	1935.	1936.	1937.
	Acres.	Acres.	Acres.	Acres.	Acres.	Lb.	Lb.	Lb.	Lb.	Lb.
Ayr	45	10	..	..	7	11,271	111	..	..	1,391
Banana	1,155	1,374	1,593	960	841	708,510	1,354,872	541,693	431,404	227,231
Biggenden	723	173	288	285	290	207,601	60,004	106,449	85,301	54,425
Bowen	13	23	17	31	57	920	22,681	6,434	5,078	22,923
Bundaberg	141	27	38	22	25	29,982	1,290	10,716	3,541	8,904
Cardwell	33	4	6	6	6	7,923	2,071	4,429	2,404	3,252
Childers	153	9	68	61	54	95,835	3,060	26,881	17,949	11,805
Chinchilla	181	2	112	26	54	15,947	300	28,457	4,395	3,055
Clermont	101	128	71	81	50	7,581	31,326	4,170	15,627	6,755
Clifton	..	..	30	..	5	..	..	7,159	..	2,895
Condamine	97	172	74	294	425	44,997	25,423	35,059	102,625	55,053
Dalby	99	18	101	100	221	38,447	9,700	26,334	29,176	34,490
Dugandan	197	31	57	50	48	63,538	11,286	22,708	23,067	10,877
Eidsvold	1,763	1,607	1,842	1,504	1,144	436,397	983,307	559,982	380,924	104,461
Emerald	94	51	133	14	9	21,338	15,495	15,400	3,199	3,256
Esk	26	41	57	27	30	7,456	9,189	35,706	8,607	5,397
Gatton	387	224	273	249	222	141,967	132,231	119,214	108,699	63,665
Gayndah	3,820	2,860	4,261	5,533	4,851	1,086,766	2,626,323	1,803,475	1,382,383	371,814
Gin Gin	225	90	12	59	46	74,350	14,998	8,315	18,982	22,564
Gladstone	849	328	278	262	270	211,518	270,642	79,186	81,801	54,298
Harrisville	159	52	14	17	37	66,185	22,714	5,127	8,053	6,552
Ipswich	89	32	120	43	23	33,767	17,308	35,179	18,932	4,858
Kilkivan	118	32	49	45	28	35,029	22,802	13,663	16,323	4,730
Laidley	209	157	103	98	103	67,547	40,928	38,523	46,905	22,427
Lowood	180	106	37	69	95	58,837	32,818	23,515	33,255	17,653
Mackay	54	2	113	81	42	7,269	500	22,431	13,389	3,165
Marburg	67	59	14	25	24	27,652	11,625	5,967	12,788	7,124
Mareeba	40	58	146	115	87	4,446	21,225	39,628	8,512	15,151
Maryborough ..	85	11	58	5	32	24,014	856	11,636	1,389	10,633
Monto	10,752	5,966	7,898	8,357	3,981	2,559,172	5,736,304	3,044,948	2,509,953	552,616
Mount Morgan ..	41,134	27,226	33,313	39,725	35,086	10,297,069	13,973,397	13,051,960	12,810,172	8,898,190
Mount Perry ..	76	35	43	45	32	19,996	27,171	22,628	24,177	11,337
Nanango	240	60	189	298	739	66,652	15,437	38,973	63,483	225,528
Pittsworth	27	..	..	52	61	2,977	..	..	6,082	7,342
Rockhampton ..	2,439	1,009	1,484	1,939	1,535	433,689	926,831	436,670	293,594	334,387
Roma	498	418	334	253	120	149,645	112,341	49,715	48,906	5,334
Rosewood	179	37	22	56	31	61,039	4,037	5,384	27,742	10,643
St. Lawrence ..	129	44	45	26	7	27,132	9,954	15,438	5,406	1,335
Springsure	96	45	109	76	71	10,599	4,941	10,401	12,503	2,579
Texas	..	5	4	5	41	..	1,196	603	294	12,379
Tiaro	40	8	14	19	3	14,720	2,475	5,335	5,961	432
Toogoolawah ..	68	50	22	72	43	14,605	22,102	14,154	37,580	3,244
Toowoomba–Helidon	15	16	22	49	58	3,860	7,750	14,162	26,317	13,393
Wienholt	1,078	670	1,369	1,105	1,721	444,965	306,319	420,564	451,760	550,321
All Other Districts	329	127	114	61	37	75,096	28,839	17,047	9,962	2,964
Total, State ..	68,203	43,397	54,947	62,200	52,692	17,718,306	26,924,179	20,785,418	19,198,600	11,792,828

Note.—Approximately 2,900 persons supplied seed cotton to the ginneries in 1937.

Table No. 13.

SUGAR CANE—Growers and Areas, 1937.

Division and District.	Cane Growers. a		Area of Cane Grown.				
	With less than five Acres of Cane.	Total.	Cut for Plants.	Standover and Newly Planted (Not Cut in 1937.)	Cut for Crushing.	Total. b	Total per Grower.
	No.	No.	Acres.	Acres.	Acres.	Acres.	Acres.
Rockingham—							
Cairns and Douglas . . .	12	785	1,638	5,737	38,500	45,875	58·4
Cardwell, Ingham, and Innisfail	8	1,433	3,295	11,304	65,398	79,997	55·8
Total, Rockingham	20	2,218	4,933	17,041	103,898	125,872	56·8
Edgecumbe—							
Ayr and Townsville . .	1	616	1,088	16,889	24,406	42,383	68·8
Proserpine and Bowen	6	367	483	3,799	8,989	13,271	36·2
Mackay and St. Lawrence	75	1,933	3,363	22,133	66,948	92,444	47·8
Total, Edgecumbe	82	2,916	4,934	42,821	100,343	148,098	50·8
Wide Bay—							
Bundaberg and Gin Gin	50	1,142	870	15,748	25,252	41,870	36·7
Biggenden, Childers, Maryborough, Tiaro, and Gympie (Mary Valley)	139	873	576	13,286	11,221	25,083	28·7
Total, Wide Bay . . .	189	2,015	1,446	29,034	36,473	66,953	33·2
Moreton—							
Maroochy, Redcliffe, and Gympie (Coastal)	171	516	145	2,700	3,718	6,563	12·7
Logan, and Southport	79	210	48	607	699	1,354	6·4
Total, Moreton	250	726	193	3,307	4,417	7,917	10·9
Total, Queensland	541	7,875	11,506	92,203	245,131	348,840	44·3

a Represents the number of separate holdings on which cane was grown for sugar, and the figures shown may, therefore, not be the number of individual cane suppliers to mills, as the crops of several suppliers are sometimes grown on the one holding.

b Exclusive of 4,363 acres cut for green fodder in the State ; 4,312 acres of which were in the sugar districts listed above.

Table No. 14.

SUGAR—Production of Cane and Raw Sugar, 1937.

Division and District.	On Farms in each District.				In Mills in each District.			
	Cane cut for Crushing.	Cane per Acre.	Estimated Raw Sugar Yield. a	Sugar per Acre.	Cane Crushed.	Raw Sugar Produced. a	Cane for each ton of Sugar.	Molasses Produced.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Gallons.
Rockingham—								
Cairns and Douglas	990,571	25·73	145,260	3·77	1,000,328	146,688	6·82	4,279,388
Cardwell, Ingham and Innisfail . .	1,586,479	24·26	236,655	3·62	1,523,973	227,019	6·71	5,658,422
Total, Rockingham . . .	2,577,050	24·80	381,915	3·68	2,524,301	373,707	6·75	9,937,810
Edgecumbe—								
Ayr and Townsville	777,944	31·88	122,099	5·00	832,143	130,530	6·38	3,208,803
Proserpine and Bowen . . .	141,527	15·74	21,842	2·43	167,178	25,802	6·48	4,050,595
Mackay and St. Lawrence	989,186	14·78	152,398	2·28	962,085	148,215	6·49	604,600
Total, Edgecumbe . . .	1,908,657	19·02	296,339	2·95	1,961,406	304,547	6·44	7,863,998
Wide Bay—								
Bundaberg and Gin Gin	423,423	16·77	55,770	2·21	441,666	58,094	7·60	2,299,498
Biggenden, Childers, Maryborough, Tiaro and Gympie (Mary-Valley)	143,673	12·80	18,797	1·68	125,430	16,473	7·61	703,313
Total, Wide Bay	567,096	15·55	74,567	2·04	567,096	74,567	7·61	3,002,811
Moreton—								
Maroochy, Redcliffe and Gympie (Coastal)	66,113	17·78	8,695	2·34	66,113	8,695	7·60	324,917
Logan and Southport	13,970	19·99	1,726	2·47	13,970	1,726	8·09	39,600
Total, Moreton	80,083	18·13	10,421	2·36	80,083	10,421	7·68	364,517
Total, Queensland	5,132,886	20·94	763,242	3·11	5,132,886	763,242	6·73	21,169,136

a Raw Sugar Production is stated in tons of 94 net titre.

Sugar Districts.—The divisions used are the standard statistical divisions (as used throughout this Report) with the following modifications:—

(1) Although actually in Port Curtis, St. Lawrence Petty Sessions District, being portion of the Mackay Sugar area, is included in Edgecumbe.

(2) The Mary Valley portion of Gympie Petty Sessions District is included in Wide Bay, the cane from this area having been crushed at Bauple Mill.

(3) The Coastal portion of Gympie District south of the City, though actually in Wide Bay, is included in Moreton, the cane from this area having been crushed at Nambour Mill.

Table No. 15.

SUGAR.—Five Years Summary for Divisions.

Statistical Division.	Year.	On Farms in each Division.			In Mills in each Division.		
		Area Cut for Crushing.	Cane cut for Crushing.	Cane per Acre.	Cane Crushed.	Raw Sugar Produced. *a*	Cane for each ton of Sugar.
		Acres.	Tons.	Tons.	Tons.	Tons.	Tons.
Rockingham	1933	97,926	2,318,311	23·67	2,270,466	311,529	7·29
	1934	90,999	1,732,883	19·04	1,686,857	233,976	7·21
	1935	93,368	1,814,619	19·44	1,780,804	258,563	6·89
	1936	104,182	2,458,466	23·60	2,409,891	333,686	7·22
	1937	103,898	2,577,050	24·80	2,524,301	373,707	6·75
Edgecumbe	1933	85,936	1,689,359	19·66	1,737,204	249,738	6·96
	1934	87,490	1,721,133	19·67	1,767,159	269,801	6·55
	1935	90,103	1,496,601	16·61	1,530,416	233,897	6·54
	1936	97,234	1,917,716	19·72	1,966,291	301,877	6·51
	1937	100,343	1,908,657	19·02	1,961,406	304,547	6·44
Wide Bay	1933	39,233	559,949	14·27	558,533	64,182	8·70
	1934	36,422	765,729	21·02	763,926	100,309	7·62
	1935	39,715	810,229	20·40	810,229	104,386	7·76
	1936	39,832	715,596	17·97	715,596	97,907	7·31
	1937	36,473	567,096	15·55	567,096	74,567	7·61
Moreton	1933	5,059	99,503	19·67	100,919	13,110	7·70
	1934	3,515	51,635	14·69	53,438	7,075	7·55
	1935	5,329	98,986	18·57	98,986	13,234	7·48
	1936	4,670	78,793	16·87	78,793	11,206	7·03
	1937	4,417	80,083	18·13	80,083	10,421	7·68
Total, Queensland	1933	228,154	4,667,122	20·46	4,667,122	638,559	7·31
	1934	218,426	4,271,380	19·56	4,271,380	611,161	6·99
	1935	228,515	4,220,435	18·47	4,220,435	610,080	6·92
	1936	245,918	5,170,571	21·03	5,170,571	744,676	6·94
	1937	245,131	5,132,886	20·94	5,132,886	763,242	6·73

a In tons of 94 n.t.

Table No. 16.

MOLASSES.—Production and Disposal, 1937.

Statistical Division.	Molasses Produced.	Molasses Disposed of. *a*						
		To Distilleries.	As Stock Food.	As Manure.	In Furnaces.	In Ferment.	For Other Uses.	As Waste.
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.
Rockingham	9,937,810	3,361,620	762,329	1,349,685	3,905,236	96,819	7,360	106,311
Edgecumbe	7,863,998	2,105,008	2,502,091	1,307,967	1,557,075	53,017	..	360,170
Wide Bay	3,002,811	1,402,193	534,884	705,972	114,453	..	..	..
Moreton	364,517	202,288	114,809	..	..	300	..	..
Total, Queensland, 1937	21,169,136	7,071,109	3,914,113	3,363,624	5,576,764	150,136	7,360	466,481

Five Years Summary—Queensland.

1933	19,361,604	4,107,566	2,902,188	1,793,101	7,348,015	*b*	340,928	1,747,365
1934	17,262,794	4,573,037	3,035,598	2,227,905	5,339,489	104,552	444,680	1,162,715
1935	16,948,539	4,617,431	3,817,755	2,559,528	4,103,475	125,300	175,519	1,214,678
1936	21,355,321	6,086,864	4,351,822	3,211,423	6,354,841	145,060	252,020	560,326
1937	21,169,136	7,071,109	3,914,113	3,363,624	5,576,764	150,136	7,360	466,481

a The difference between production and total disposals of molasses is accounted for by stocks carried over.
b Not available.

Table No. 17.

SUGAR-GROWING—SUMMARY.

Year.	Cane Growers.		Area of Cane Grown.			Production.					
	With less than 5 Acres of Cane.	Total.	Cut for Crushing.	Total under Cane. *b*	Total per Grower.	Cane Crushed.	Raw Sugar. *c*	Cane per Acre Cut.	Cane for each ton of Sugar.	Sugar per Acre Cut.	Gross Value. of Cane Cut. *e*
	No.	No.	Acres.	Acres.	Acres.	Tons.	Tons.	Tons.	Tons.	Tons.	£
1911–1915 *a*	*	*	95,837	146,799	*	1,537,880	179,107	16·05	8·57	1·87	1,591,405
1916–1920 *a*	*	*	94,042	162,921	*	1,711,354	200,840	18·20	8·52	2·14	2,985,826
1921–1925 *a*	*	*	151,933	225,962	*	2,668,161	346,776	17·56	7·69	2·28	5,945,796
1926–1930 *a*	729	7,255	209,132	282,513	38·94	3,465,545	486,187	16·57	7·13	2·32	6,935,120
1931–1935 *a*	493	7,395	222,689	306,298	41·42	4,147,921	591,021	18·63	7·02	2·65	7,086,777
1928	647	7,149	215,674	283,476	39·65	3,736,311	520,620	17·32	7·18	2·41	7,209,778
1929	1,064	7,311	214,880	291,660	39·89	3,581,265	518,516	16·67	6·91	2·41	7,163,024
1930	543	7,228	222,044	296,070	40·96	3,528,660	516,783	15·89	6·83	2·33	7,040,415
1931	541	7,392	233,304	309,818	41·91	4,034,300	581,276	17·29	6·94	2·49	7,326,233
1932	553	7,231	205,046	291,136	40·26	3,546,370	514,027	17·30	6·90	2·51	6,852,717
1933	409	7,386	228,154	311,910	42·23	4,667,122	638,559	20·46	7·31	2·80	7,247,122
1934	513	7,426	218,426	303,926	40·93	4,271,380	611,161	19·56	6·99	2·80	6,934,764
1935	451	7,538	228,515	314,700	41·75	4,220,435	610,080	18·47	6·92	2·67	7,073,049
1936	420	7,784	245,918	338,686	43·51	5,170,571	744,676	21·03	6·94	3·03	8,297,838
1937	541	7,875	245,131	348,840	44·30	5,132,886	*d* 763,242	20·94	6·73	3·11	8,572,730

* Not available. *a* Annual average. *b* Exclusive of area cut for fodder. *c* In tons of 94 N.T.

d The value at Mill of Raw Sugar produced in 1937 was £11,326,230, equal to £14 16s. 10d. a ton. The average price paid to Mills by the Sugar Board was £15 6s. 5d. at nearest Mill port.

e Value of cane delivered at mill tramways. The 1937 value includes £159,635 costs of transport other than on the mills' own tramways, lorries, etc., and £72,091 levies on cane paid by millers and growers, the net value to growers being £8,341,004.

Table No. 18.

SUGAR MILLS *a*, 1936–37.

Division.	Mills.	Workers During Period of Operation.	Salaries and Wages Paid.	Value of—			
				Machinery and Plant.	Land and Buildings.	Output.	Production.
	No.	No.	£	£	£	£	£
Rockingham	10	1,920	544,736	4,548,852	559,058	5,122,445	1,000,404
Edgecumbe	12	1,716	475,349	2,049,919	290,898	4,130,144	799,853
Wide Bay	8	712	183,005	751,705	163,645	1,580,350	324,766
Moreton	3	128	27,146	172,156	13,366	193,337	53,809
Total, Queensland ..	33	4,476	1,230,236	7,522,632	1,026,967	11,026,276	2,178,832
FIVE YEARS SUMMARY.							
1932–33	33	5,191	1,001,482	6,625,262	806,574	9,531,404	1,978,093
1933–34	33	5,374	1,190,086	6,518,636	794,111	10,281,640	2,222,457
1934–35	33	4,585	1,164,638	6,705,397	762,997	9,533,760	2,087,196
1935–36	33	4,213	1,149,018	7,688,522	1,019,066	9,699,025	2,151,057
1936–37	33	4,476	1,230,236	7,522,632	1,026,976	11,026,276	2,178,832

a Including Mill Tramways, but not including Refineries.

Table No. 19.

AUSTRALIAN SUGAR PRODUCTION.

Year.	Area Under Cultivation. *a*	Area Harvested.	Production (Cane or Beet).	Raw Sugar Made. *b*	Raw Sugar as Percentage of Australian Total.
	Acres.	Acres.	Tons.	Tons.	Per cent.
QUEENSLAND (CANE SUGAR).					
1933	311,910	228,154	4,667,122	638,559	94·9
1934	303,926	218,426	4,271,380	611,161	94·5
1935	314,700	228,515	4,220,435	610,080	93·6
1936	338,686	245,918	5,170,571	744,676	94·6
1937	348,840	245,131	5,132,886	763,242	93·5
NEW SOUTH WALES (CANE SUGAR).					
1933	16,929	10,015	230,918	28,809	4·3
1934	18,531	7,572	227,424	30,690	4·7
1935	20,394	10,416	280,472	36,463	5·6
1936	20,642	10,231	275,169	38,053	4·9
1937	*c*	10,716	361,724	46,985	5·8
VICTORIA (BEET SUGAR).					
1933	3,234	3,234	50,625	5,303	0·8
1934	3,062	3,062	40,788	4,998	0·8
1935	3,165	3,165	37,634	5,115	0·8
1936	3,475	3,475	31,079	4,180	0·5
1937	4,046	4,046	48,594 *d*	5,625	0·7

a Exclusive of area cut for fodder. *b* In tons of 94 N.T.
c Not yet available. *d* The quantity of beet sliced was 47,330 tons.

Table No. 20.

SUGAR MILLS.

Number of Sugar Mill Companies to which advances have been made under—	
The Sugar Works Guarantee Acts	13
"*The Sugar Works Act of* 1911" (Babinda and South Johnstone)	2
"*The Sugar Works Act of* 1922" (Tully River Mill)	1
From Consolidated Revenue (North Eton and Racecourse)	2
From General Loan Fund	6
From Trust Funds	None
Number of Tramway Companies to which advances have been made under—	
The Sugar Works Guarantee Acts (Double Peak)	1
Under other conditions	None

	£	*s.*	*d.*	£	*s.*	*d.*
Total amount of advances made to 31st December, 1937, under the Sugar Works Guarantee Acts—						
Marian Mill	39,000	0	0			
Mount Bauple	32,480	16	1			
Pleystowe	35,472	1	3			
Nerang River	19,998	18	10			
Gin Gin	50,000	0	0			
Plane Creek	65,000	0	0			
North Eton	18,200	0	0			
Proserpine	54,000	0	0			
Moreton	32,864	15	0			
Mulgrave	46,000	0	0			
Isis	38,636	0	0			
Mossman	66,300	0	0			
Johnstone	847	17	8			
				498,800	8	10
Under "*The Sugar Works Act of* 1911"—						
Babinda Mill	405,429	18	8			
South Johnstone	648,009	7	8			
				1,053,439	6	4
Under "*The Sugar Works Act of* 1922"—						
Tully River	..			795,221	0	0
From Consolidated Revenue—						
North Eton	26,000	0	0			
Racecourse	21,000	0	0			
				47,000	0	0
From General Loan Fund—						
North Eton Mill	62,965	18	4			
Mount Bauple	8,500	0	0			
Gin Gin	4,500	0	0			
Proserpine	128,265	9	4			
Moreton	14,350	0	0			
Mossman	14,071	14	0			
				232,653	1	8
Indebtedness at 31st December, 1937—						
Under "*The Sugar Works Act of* 1911"—						
Babinda Mill	..			..		
Under "*The Sugar Works Acts,* 1930 *to* 1937"—						
Tully River Mill	..			345,937	10	8
Under "*The South Johnstone, Gin Gin, North Eton, and Mount Bauple Sugar Works Acts,* 1927 *to* 1937"—						
South Johnstone Mill	184,924	10	11			
Gin Gin	15,854	19	9			
North Eton	28,153	11	5			
Mount Bauple	20,000	0	0			
				248,933	2	1
To General Loan Fund—						
Proserpine	68,169	10	4			
Gin Gin	2,500	0	0	70,669	10	4

Table No. 21.

ARROWROOT.

Year.	Area.	Production Tubers.	Value.	No. of Mills.	Workers during period of operation.	Tubers used.	Arrowroot Made.	Value.
	Acres.	Tons.	£		No.	Tons.	Tons.	£
1933	797	9,950	13,432	14	101	8,908	907	23,200
1934	835	9,712	10,683	14	133	8,214	827	17,169
1935	860	10,239	10,239	14	107	7,161	719	12,779
1936	865	10,204	10,500	13	101	7,893	790	14,972
1937	774	7,494	12,030	(*a*)	(*a*)	(*a*)	(*a*)	(*a*)

(*a*) Not yet available.

Table No. 22.

TOBACCO.—Area and Produce in Petty Sessions Districts.

Petty Sessions District.	Area.					Produce (Dried Leaf).				
	1933.	1934.	1935.	1936.	1937.	1933.	1934.	1935.	1936.	1937.
	Acres.	Acres.	Acres.	Acres.	Acres.	Lb.	Lb.	Lb.	Lb.	Lb.
Moreton—										
Brisbane (North) ..	4	..	..	..	..	1,480	..	..	..	..
Brisbane (South) ..	20	..	..	..	..	20,000	..	..	..	..
Caboolture	6	3	20	7	3	338	2,694	300	561	3,100
Gatton	2	..	..	*	..	500	..	..	20	..
Lowood	1	..	..	..	..	500	..	..	..	..
Wide Bay—										
Bundaberg	4	29	26	26	30	1,618	3,980	9,739	11,439	8,000
Gayndah	..	..	..	2	2	..	..	..	257	481
Gympie	9	..	..	..	..	4,530	..	..	..	..
Downs—										
Goondiwindi ..	..	..	..	51	..	..	..	..	18,820	..
Inglewood	258	234	337	270	365	187,940	82,131	143,835	217,000*a*	264,587*a*
Stanthorpe	86	42	25	3	5	42,546	40,653	26,730	..	2,550
Texas	606	151	174	320	279	484,299	87,398	107,181	300,000*a*	267,343*a*
Port Curtis—										
Gladstone	48	32	62	72	120	19,006	8,481	24,797	44,919	69,100*a*
Rockhampton ..	2	..	1	..	..	415	..	387	..	..
Edgecumbe—										
Ayr	16	9	10	18	2	7,433	2,920	4,660	9,500	685
Bowen	58	76	139	156	129	25,060	71,506	70,228	68,692	61,425*a*
Charters Towers ..	17	18	4	2	..	11,565	18,646	1,558	500	..
Collinsville	..	14	15	10	13	..	6,240	5,500	3,300	7,791
Mackay	75	25	87	163	255	63,271	38,052	60,621	80,000*a*	135,690*a*
Ravenswood ..	6	6	3	4	2	2,800	5,824	3,584	3,360	2,464
Townsville	228	110	99	119	57	55,043	88,896	24,840	59,463	21,090
Rockingham—										
Atherton	..	15	15	15	6	..	3,849	6,494	6,000	2,600
Cairns	168	30	20	..	..	43,385	4,710	4,422	..	..
Chillagoe	13	1	..	..	..	3,978	70	..	..	..
Herberton	131	18	18	21	21	54,632	3,246	4,649	7,595	8,376
Ingham	2	4	4	..	10	300	1,200	3,500	..	7,000
Mareeba	2,227	1,258	2,053	2,714	2,513	1,046,571	553,253	1,051,308	1,173,605*a*	1,454,784*a*
Peninsula—										
Cook	17	6	5	..	..	2,549	1,300	750	..	..
Total State ..	4,004	2,081	3,117	3,973	3,812	2,079,754	1,025,049	1,555,083	2,005,031	2,317,066

* Less than ½ acre. *a* Partly based on estimates made by experts of Department of Agriculture and Stock.

Table No. 23.

GRAPES —Area under Vines and Production of Grapes in Petty Sessions Districts.

Petty Sessions District.	Total Area under Vines.			Bearing Area.			Production.		
	1935.	1936.	1937.	1935.	1936.	1937.	1935.	1936.	1937.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres	Lb.	Lb.	Lb.
Banana	1	1	1	1	1	1	2,800	1,720	2,625
Brisbane (North)	286	244	262	256	221	241	398,371	427,091	459,488
Brisbane (South)	2	5	8	2	5	6	663	13,422	17,600
Caboolture	3	1	4	3	1	4	1,100	800	1,350
Cape River	1	3	3	1	2	2	8,214	6,154	6,847
Charleville	3	5	1	3	5	1	4,020	8,460	3,805
Charters Towers	14	20	27	14	19	24	38,517	43,696	50,670
Cleveland	2	3	3	2	3	1	2,000	3,788	1,900
Clifton	2	1	1	2	1	1	1,590	3,210	1,872
Condamine	6	4	2	6	4	2	2,850	1,825	2,592
Cunnamulla	2	2	1	2	2	1	4,050	2,357	2,010
Dalby	1	2	2	1	1	2	1,132	7,316	14,634
Eidsvold	1	2	1	1	1	1	1,100	480	805
Gatton	2	4	4	2	4	4	800	8,900	3,400
Gladstone	6	2	1	6	2	1	4,940	3,075	1,310
Goondiwindi	2	*	1	2	*	1	840	1,265	2,825
Gympie	3	15	10	1	10	8	530	15,839	6,980
Herberton	15	13	9	13	12	7	16,383	13,679	10,400
Laidley	2	1	1	2	1	1	1,420	1,700	2,700
Logan	3	5	3	3	4	3	5,606	4,298	3,407
Lowood	71	57	73	55	55	61	248,200	209,000	186,530
Mackay	1	2	3	1	2	1	2,250	2,152	2,187
Maryborough	7	8	9	7	8	8	8,590	5,363	11,084
Nanango	1	2	1	1	1	1	1,380	695	3,710
Oakey	7	3	6	7	3	3	14,471	7,369	5,650
Rockhampton	59	40	33	43	34	28	68,570	57,118	68,295
Roma	538	429	454	496	355	404	378,711	509,187	305,141
Stanthorpe	1,339	1,528	1,679	1,018	1,101	1,307	3,862,256	3,464,749	3,922,481
Tiaro	6	5	5	4	5	5	6,140	11,439	12,916
Toogoolawah	9	10	9	9	5	8	8,000	9,672	14,990
Toowoomba Helidon	3	4	6	3	3	5	19,100	15,030	20,400
Toowoomba	14	13	8	14	13	8	23,479	18,926	19,909
Warwick	35	22	34	26	22	31	43,178	42,905	54,570
Woodford	1	*	..	1	*	..	2,170	1,300	..
Wynnum	10	7	8	9	6	6	33,880	18,320	13,730
Yeulba	2	3	6	2	3	5	1,270	5,000	7,410
All Other Districts	10	35	37	6	29	31	950	50,551	76,662
Total State	2,470	2,501	2,716	2,025	1,944	2,224	5,219,521	4,997,851	5,322,885

* Less than ½ acre.

Table No. 24.

WINE MADE IN PETTY SESSIONS DISTRICTS DURING 1936 AND TOTAL STATE FIGURES FOR FIVE YEARS.

Petty Sessions District.	Number of Makers.	Quantity of Wine Made.	Grapes Used.
	No.	Gallons.	Lb.
Caboolture	1	60	1,200
Childers	1	25	600
Clifton	2	28	370
Gladstone	1	70	1,000
Oakey	1	60	1,200
Roma	1	11,091	175,000
Stanthorpe	11	3,680	53,100
Toogoolawah	1	300	3,500
Toowoomba	4	695	9,340
Warwick	1	650	13,440
Wynnum	1	250	5,000
Total State	25	16,909	263,750
Total State, 1937	25	16,909	263,750
1936	22	29,121	388,230
1935	21	22,569	328,368
1934	26	38,051	570,121
1933	38	31,796	460,033

Table No. 25.

BANANAS—AREA AND PRODUCTION IN PETTY SESSION DISTRICTS.

Petty Sessions District.	Growers.			Total Area.			Area Bearing.			Produce.		
	1935.	1936.	1937.	1935.	1936.	1937.	1935.	1936.	1937.	1935.	1936.	1937.
	No.	No.	No.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Bunches.	Bunches.	Bunches.
Atherton	2	11	7	2	3	5	2	3	5	100	444	1,304
Ayr	1	12	14	30	27	37	30	21	24	2,600	4,456	7,262
Beaudesert	2	3	1	12	16	11	12	15	11	1,850	2,100	950
Biggenden	1	4	2	2	15	16	2	13	14	172	3,112	1,674
Bowen	6	13	7	11	11	8	11	5	7	3,000	1,588	1,917
Brisbane (North)	74	62	40	280	281	281	177	159	146	38,609	50,786	38,549
Brisbane (South)	5	3	2	12	2	*	9	1	*	2,100	650	40
Bundaberg	22	27	24	82	83	60	68	59	36	36,787	15,996	10,213
Burke	..	1	1	..	1	2	..	*	2	..	20	98
Caboolture	30	32	32	249	331	345	163	190	233	50,455	62,423	49,418
Cairns	34	39	28	158	147	96	151	134	75	15,935	10,868	13,447
Cardwell	7	6	13	40	35	50	27	20	36	4,330	2,612	9,942
Charters Towers	1	..	..	6	..	..	..	..	..	..	..	..
Childers	..	3	1	..	*	*	..	*	*	..	31	50
Chillagoe	1	2	..	1	1	..	1	1	..	10	100	..
Cleveland	115	67	42	222	196	121	171	152	71	33,496	30,345	15,047
Coen	..	1	..	..	*	..	..	*	..	..	2	..
Cook	3	3	3	4	4	2	3	4	2	371	345	330
Croydon	..	..	1	..	..	*	..	..	*	..	..	40
Douglas	..	2	3	...	*	*	..	*	*	..	36	55
Dugandan	1	2	1	5	5	1	5	5	..	600	200	..
Eidsvold	..	..	1	..	..	1	..	..	..	..	...	..
Emerald	..	..	1	..	..	*	..	..	*	..	..	6
Esk	6	5	2	27	20	25	23	11	19	5,640	2,947	1,220
Gayndah	4	5	5	12	16	17	9	14	15	898	1,806	1,260
Gin Gin	1	3	2	2	4	3	..	3	3	..	340	270
Gladstone	19	13	20	51	91	99	39	52	68	9,660	13,833	16,339
Gympie	136	112	108	934	723	808	809	425	397	178,452	109,379	107,325
Herberton	..	3	28	..	*	..	..	*	..	..	18	..
Hughenden	..	..	1	..	..	*	..	..	*	..	..	10
Ingham	1	90	..	1	8	6	1	8	6	100	1,375	1,335
Innisfail	..	14	7	..	17	3	..	16	3	..	1,940	326
Kilcoy	5	3	2	51	18	20	48	18	8	6,458	2,950	2,000
Laidley	1	1	1	3	2	2	2	2	2	300	300	190
Logan	167	139	161	655	604	648	534	464	430	165,187	157,586	134,760
Mackay	13	38	36	50	49	63	35	34	33	7,084	9,360	11,387
Mareeba	2	11	15	4	21	7	4	10	5	180	531	671
Maroochy	331	268	303	1,820	1,484	1,475	1,520	1,002	922	416,011	283,248	296,046
Maryborough	12	17	17	39	16	14	35	11	10	4,835	3,613	3,068
Mount Perry	..	2	1	..	6	2	..	2	2	..	200	220
Norman	..	..	1	..	..	*	..	..	*	..	..	100
Proserpine	..	1	..	..	*	..	..	*	..	..	20	..
Redcliffe	52	37	39	238	196	319	174	141	164	44,089	43,043	41,916
Rockhampton	43	28	45	242	275	271	195	159	190	49,349	54,263	65,013
Somerset	..	2	2	..	10	11	..	*	7	..	18	412
Southport	236	117	195	2,582	2,135	2,817	2,139	1,487	1,931	527,274	491,454	595,340
St. Lawrence	6	5	6	13	13	10	8	9	9	1,450	1,680	1,829
Tiaro	8	8	10	43	47	30	39	36	15	7,250	5,670	1,800
Toowoomba-Helidon	..	..	1	..	..	1	..	..	..	..	..	..
Townsville	12	17	15	41	43	40	36	27	28	3,380	4,152	4,714
Woodford	51	21	23	511	306	424	461	229	343	99,518	57,743	71,986
Wynnum	6	7	5	65	43	23	61	41	16	15,848	13,661	7,572
Total State	1,417	1,260	1,275	8,500	7,305	8,174	7,004	4,983	5,288	1,733,378	1,447,244	1,517,451

* Less than ½ acre.

Table No. 26.

PINEAPPLES—Area and Production in Petty Sessions Districts.

Petty Sessions District.	Total Area.			Bearing Area.			Produce.		
	1935.	1936.	1937.	1935.	1936.	1937.	1935.	1936.	1937.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Dozen.	Dozen.	Dozen.
Atherton	..	2	6	..	2	5	..	232	228
Ayr	4	1	10	4	1	2	10	127	548
Biggenden	6	6	7	5	6	6	835	548	76
Bowen	234	224	207	204	149	148	29.724	29,446	27,005
Brisbane (North) ..	364	366	397	300	270	250	83,522	73,934	56,402
Brisbane (South) ..	217	191	202	192	136	138	37,581	22,324	22,141
Bundaberg	57	65	67	31	41	45	3,875	6,510	6,590
Caboolture	657	589	495	497	413	322	162,124	79,263	156,830
Cairns	45	40	28	45	36	24	4,870	3,016	5,127
Cardwell	3	9	10	3	5	8	103	643	901
Charters Towers ..	..	1	..	..	1	..	..	..	..
Childers	..	1	28	..	1	26	..	146	2,660
Chillagoe	..	*	..	..	*	..	..	2	..
Cleveland	541	635	356	438	516	224	101,648	75,914	48,685
Coen	..	*	..	..	*	..	..	1	..
Cook	2	2	*	2	2	*	86	86	6
Croydon	..	..	*	..	..	*	..	..	10
Douglas	..	..	*	..	..	*	..	..	6
Dugandan	1	2	1	1	1	1	62	108	20
Eidsvold	..	1	1	..	..	*	..	..	3
Esk	1	*	..	1	..	..	30	..	..
Gatton	..	..	3	..	..	*	..	..	2
Gayndah	9	11	10	6	9	7	696	447	792
Gin Gin	8	10	3	8	10	3	650	735	207
Gladstone	20	17	24	14	14	12	2,201	2,744	4,081
Gympie	635	772	902	485	505	540	129,560	210,252	156,872
Ingham	..	6	16	..	6	14	..	1,706	6,894
Innisfail	..	1	*	..	1	*	..	55	57
Ipswich	34	34	27	34	29	24	8,120	5,026	7,100
Kilcoy	..	*	..	..	*	..	..	50	..
Kilkivan	..	*	..	..	*	..	..	7	..
Laidley	3	3	3	2	2	2	181	177	134
Logan	51	49	62	41	37	33	11,847	6,745	7,143
Lowood	10	24	37	10	18	20	2.410	6,174	3,370
Mackay	21	25	23	12	17	17	2,200	3,116	5,726
Marburg	15	12	18	14	10	13	1,620	595	1,243
Mareeba	2	3	7	2	1	5	90	246	289
Maroochy	2,097	2,427	2,806	1,582	1,578	1,792	554,690	565,765	671,752
Maryborough ..	124	228	146	95	194	106	24,752	32,706	34,147
Monto	1	..	..	1	..	..	95	..	..
Mount Morgan ..	8	5	3	8	5	2	839	710	239
Mount Perry	..	*	1	..	*	1	..	20	..
Nanango	..	1	4	..	1	2	..	60	545
Norman	..	..	*	..	..	*	..	..	34
Prosperpine	..	*	*	..	*	*	..	49	27
Redcliffe	98	119	155	70	77	91	13,687	16,839	29,784
Rockhampton ..	217	192	201	194	146	144	43,738	36,096	34,621
Rosewood	..	1	..	..	..	..	..	..	..
Somerset	1	2	5	1	2	4	60	40	66
Southport	21	5	14	18	5	8	4,190	640	1,860
St. Lawrence ..	16	13	17	9	9	10	2,232	2,323	3,851
Tiaro	40	36	40	37	27	26	4,575	5,412	5,233
Townsville	96	81	99	89	66	85	83,079	25,356	16,234
Wienholt	1	6	3	1	3	3	20	105	363
Woodford	26	19	20	23	13	16	3,840	2,589	2,240
Wynnum	93	77	85	66	43	49	13,573	8,649	8,944
Total State ..	5,779	6,314	6,549	4,545	4,408	4,228	1,333,415	1,227,734	1,331,091

*Less than ½ Acre.

Table No. 27.

ORANGES AND MANDARINS.—Area and Production in Petty Sessions Districts.

Petty Sessions District.	Total Area.			Bearing Area.			Produce.		
	1935.	1936.	1937.	1935.	1936.	1937.	1935.	1936.	1937.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Bushels.	Bushels.	Bushels.
Allora	28	28	60	22	22	50	1,500	762	1,406
Atherton	4	15	22	3	12	16	519	1,422	1,745
Ayr	..	12	6	..	11	2	..	749	417
Blackall	..	3	9	..	2	4	..	275	247
Bowen	38	44	42	32	35	34	1,251	821	909
Brisbane	21	24	23	14	17	11	608	1,111	331
Bundaberg	65	74	104	41	52	72	4,712	4,550	5,249
Caboolture	98	82	128	67	57	89	8.967	13,196	4,159
Cairns	36	51	94	25	45	80	4,632	7,302	7,007
Cape River	16	21	28	12	14	17	1,257	1,371	1,754
Cardwell	178	264	290	128	192	197	9,884	15,111	17,141
Charleville	12	15	23	10	13	16	1,016	683	1,013
Charters Towers ..	58	67	82	57	58	67	3.461	3,662	3.625
Childers	33	51	64	32	49	60	5.069	5,469	7,201
Cleveland	15	15	11	11	10	10	685	812	370
Cloncurry	..	7	11	..	3	7	..	88	275
Cook	29	23	60	27	21	54	878	1,043	1,900
Crow's Nest ..	26	24	25	19	18	20	1.706	676	805
Cunnamulla	8	8	9	7	8	9	380	683	611
Dalby	3	7	7	2	5	5	110	298	349
Douglas	..	4	9	..	2	6	..	274	919
Dugandan	..	2	3	..	1	2	..	119	270
Eidsvold	8	5	11	2	4	5	95	95	255
Emerald	33	41	45	33	33	40	3.070	6,790	8,891
Esk	59	63	52	52	55	44	3.036	2,166	856
Gatton	40	84	124	22	53	86	7,351	6,784	6,676
Gayndah	181	194	258	130	134	190	16,765	25,429	29,952
Gin Gin	4	10	13	4	9	11	452	613	1,088
Gladstone	43	43	43	38	36	34	2,625	2,113	3,085
Goondiwindi	8	9	18	8	9	16	14	404	270
Gympie	46	67	75	39	47	51	1,851	3,431	3,553
Harrisville	..	4	2	..	2	2	..	125	359
Herberton	3	4	7	2	2	4	404	537	963
Hughenden	5	2	11	5	2	10	539	500	634
Ingham	22	27	26	17	21	21	1,400	2,897	4,901
Innisfail	..	12	18	..	9	10	..	689	1,087
Ipswich	11	6	10	11	6	9	1,320	280	270
Logan	32	46	34	30	40	28	3,512	5,395	1,373
Mackay	41	82	100	34	56	64	3,841	3,662	9,045
Mareeba	3	17	27	3	7	11	192	441	798
Maroochy	939	888	1,040	796	715	796	97,879	93,826	61,501
Maryborough ..	487	471	542	410	370	424	53,832	48,549	58,161
Monto	..	3	2	..	1	2	..	7	245
Mount Morgan ..	15	17	23	14	13	18	1,791	1,928	1,808
Mount Perry ..	2	5	4	2	4	4	120	386	350
Nanango	1	7	6	1	5	4	13	160	214
Oakey	4	7	4	3	6	3	213	56	219
Proserpine	18	21	15	18	16	12	833	1,590	1,268
Ravenswood	5	4	6	5	3	5	270	140	514
Redcliffe	15	13	11	12	12	9	1,225	897	557
Rockhampton ..	234	202	245	196	173	212	20,399	17,501	22,279
Roma	49	60	67	39	35	48	1,341	2,755	2,949
St. Lawrence ..	..	2	3	..	1	2	..	165	322
Southport	65	53	73	52	46	61	6,522	5,069	2,986
Tiaro	15	19	23	12	13	19	1,092	1,058	695
Toogoolawah ..	1	5	6	1	4	5	88	271	253
Toowoomba—									
Helidon	13	26	49	7	20	34	1,316	2,849	1,729
Toowoomba ..	20	19	22	16	16	15	1,866	672	545
Townsville	48	22	37	32	17	33	714	204	1,725
Wienholt	7	12	11	6	8	8	811	2,061	308
Woodford	10	7	5	9	6	5	1,321	374	449
All Other Districts ..	67	114	146	65	94	114	3,021	4,093	2,277
Total State ..	3,222	3,534	4,324	2,635	2,750	3,297	287,769	307,439	293,113

Table No. 28.

GRAIN AND OTHER CROPS—AREAS, 1937.

(For Production see Table 31.)

Division.	Grain Crops.							Hay (all kinds).					Green Forage.						Potatoes.		Pumpkins.	Cotton.	Sugar-cane. a		Arrowroot.	Peanuts.	Tobacco.	Grapes.	
	Wheat.	Oats.	Barley.		Maize.	Rye.	Rice.	Wheat.	Oats.	Lucerne.	Other.	Total.	Wheat.	Oats.	Sorghum.	Lucerne.	Other.	Total.	English.	Sweet.			Cut for Crushing.	Other.				Bearing.	Not Bearing.
			Malting.	Other.																									
Moreton Division.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.
Brisbane (North)	5	4	3	..	154	..	..	10	28	121	81	210	71	226	1,084	167	1,238	2,786	118	60	372	3	..	..	1	10	..	241	21
Brisbane (South)	3	..	..	..	22	..	..	9	7	50	7	73	29	58	279	24	403	793	11	4	48	1	..	..	..	*	..	6	2
Beaudesert	22	20	8	..	3,736	..	..	8	51	2,871	322	3,252	138	2,277	854	2,037	2,441	7,747	228	49	1,042	2	..	..	25	..	..	*	2
Caboolture	..	..	2	..	77	..	..	..	7	37	17	61	17	132	136	39	219	543	49	22	48	2	..	..	1	..	3	4	..
Cleveland	..	..	..	..	2	..	..	..	2	1	1	4	5	18	32	2	64	121	10	3	17	..	..	..	..	37	..	1	2
Crow's Nest	926	113	80	110	5,297	..	..	93	146	956	22	1,217	280	4,497	1,034	2,154	3,152	11,117	236	18	583	..	..	..	..	*	..	1	..
Dugandan	130	9	8	3	5,108	1	..	80	72	3,967	508	4,627	65	2,668	1,928	2,050	5,052	11,763	1,030	44	1,476	48	..	..	..	*	..	*	..
Esk	..	2	..	..	1,181	..	..	2	22	390	55	469	15	315	356	331	550	1,567	74	47	215	30	..	..	..	1	..	1	2
Gatton	184	3	..	..	4,608	..	..	385	453	3,658	299	4,795	381	1,613	1,724	944	2,790	7,452	1,097	187	3,167	222	..	..	*	..	..	4	..
Harrisville	59	16	..	..	2,652	..	..	171	185	2,998	1,028	4,382	68	2,059	1,510	1,570	3,039	8,246	156	35	810	37	..	..	1	..	..	*	..
Ipswich	7	8	4	..	458	..	..	7	45	520	172	744	28	457	458	282	538	1,763	120	19	128	23	..	..	..	1	..	..	..
Kilcoy	..	..	..	..	737	..	..	..	6	165	4	175	12	466	160	218	338	1,194	60	69	158	..	..	..	19	..	..	*	..
Laidley	25	2	..	..	5,298	..	..	216	193	4,159	231	4,799	232	963	1,470	1,019	2,618	6,302	720	181	1,437	103	..	..	..	1	..	1	..
Logan	1	..	..	..	510	..	..	4	17	134	25	180	27	136	227	90	939	1,419	560	164	94	..	677	635	160	13	..	3	..
Lowood	4	..	..	..	2,185	..	..	29	269	1,184	150	1,632	30	1,188	1,330	636	3,417	6,601	818	115	1,361	95	..	..	1	1	..	61	12
Marburg	8	..	..	..	1,225	..	..	..	3	335	89	427	40	687	1,764	713	2,504	5,708	127	61	191	24	..	..	8	5	..	..	..
Maroochy	..	..	..	..	412	..	..	..	5	14	..	19	6	257	288	72	809	1,432	67	44	45	..	3,676	2,717	33	72	..	1	..
Redcliffe	1	..	..	..	258	..	..	2	4	80	33	119	28	262	515	77	1,190	2,072	103	81	229	..	7	44	..	..	..	*	..
Rosewood	41	17	..	..	2,308	..	..	4	125	2,109	591	2,829	56	1,116	1,784	1,140	1,283	5,379	185	27	497	31	..	..	11	1	..	..	..
Southport	..	..	..	..	650	..	..	..	11	18	51	80	12	198	155	16	416	797	237	32	59	..	22	20	382	1	..	1	..
Toogoolawah ..	10	..	..	..	3,471	..	..	15	25	1,391	72	1,503	85	1,502	909	1,464	1,100	5,060	243	121	1,180	43	..	..	..	..	..	8	1
Woodford	..	..	..	..	597	..	..	..	..	14	..	14	6	445	165	16	578	1,210	37	28	61	..	..	..	12	..	..	..	..
Wynnum	..	..	..	..	1	..	..	..	2	..	7	9	9	35	91	2	167	304	14	8	11	..	..	..	..	1	..	6	2
Oakey-Cooyar ..	334	89	17	53	1,134	..	..	5	54	285	21	365	177	1,377	153	455	1,231	3,393	94	..	358	..	..	..	..	..	..	..	*
Toowoomba-Helidon	1	24	..	..	1,129	..	..	8	69	769	168	1,014	117	1,127	1,228	460	1,281	4,213	415	116	695	58	..	..	..	2	..	5	1
Total Moreton ..	1,761	307	122	166	43,210	1	..	1,048	1,801	26,226	3,954	33,029	1,934	24,079	19,634	15,978	37,357	98,982	6,809	1,532	14,282	722	4,382	3,416	654	146	3	344	45
Wide Bay Division.																													
Biggenden	..	..	..	..	944	..	..	..	14	142	155	311	45	1,157	329	178	658	2,367	64	15	279	290	19	76	1	6	..	*	..
Bundaberg	..	..	..	..	569	..	..	..	4	112	1	117	..	85	138	61	1,177	1,461	93	36	49	25	21,712	12,542	6	7	30	1	..
Childers	..	..	..	..	55	..	..	..	5	6	1	12	..	10	2	5	176	193	8	*	1	54	6,185	9,361	..	..	..	*	..
Eidsvold	7	..	..	..	592	..	..	..	9	45	45	99	35	428	449	72	466	1,450	45	53	192	1,144	..	..	..	..	..	1	..
Gayndah	91	58	..	..	2,410	..	..	5	14	296	392	707	39	3,214	3,797	1,088	4,250	12,388	117	53	959	4,851	..	..	..	26	2	1	..
Gin Gin	..	..	..	..	397	..	..	..	9	52	16	77	4	32	35	52	551	674	30	7	25	46	3,540	4,076	..	1	..	2	..
Gympie	..	15	..	..	2,510	..	..	..	43	359	44	446	46	2,298	722	273	2,239	5,578	289	430	356	8	138	294	71	10	..	8	2
Kilkivan	..	..	..	..	395	..	..	..	2	175	27	204	8	265	117	231	217	838	32	27	114	28	..	..	..	*	..	..	..
Maryborough ..	..	1	..	..	142	..	..	25	34	225	65	349	17	65	71	69	452	674	160	27	37	32	3,874	2,566	4	25	..	8	1
Mount Perry ..	..	..	..	..	31	..	..	..	14	3	..	17	..	5	..	6	22	33	5	2	1	32	..	..	..	3	..	..	..
Nanango	1,096	682	18	4	18,583	..	..	29	379	2,347	243	2,998	571	11,275	5,284	4,205	10,167	31,502	364	106	1,206	739	..	..	3	5,801	..	1	..
Tiaro	9	..	..	..	468	..	..	11	27	195	18	251	14	172	56	122	390	754	116	27	73	3	1,040	1,649	5	1	..	5	..
Weinholt	376	347	..	86	23,626	..	..	21	239	4,104	234	4,598	247	11,592	4,143	4,069	6,306	26,357	945	192	3,115	1,721	..	..	17	4,569	..	2	..
Total Wide Bay ..	1,579	1,103	18	90	50,722	..	..	91	793	8,061	1,241	10,186	1,026	30,598	15,143	10,431	27,071	84,269	2,268	975	6,407	8,973	36,508	30,564	107	10,449	32	29	3
Downs Division.																													
Allora	30,450	248	429	457	6,834	..	..	94	67	1,687	343	2,191	1,833	2,857	2,211	1,940	2,876	11,717	10	..	83	..	..	..	..	*	..	*	..
Chinchilla	1,844	198	..	..	700	..	..	46	76	55	119	296	394	2,108	1,489	152	770	4,913	4	..	140	54	..	..	..	*	..	6	..
Clifton	48,180	539	2,440	363	9,380	..	..	1,015	60	1,532	1,674	4,281	4,471	4,534	3,439	3,367	7,999	23,810	8	..	110	5	..	..	..	..	..	1	..
Condamine	960	20	..	..	123	..	..	66	..	..	4	70	524	172	174	477	277	1,624	2	..	4	425	..	..	..	..	..	2	..
Dalby..	48,924	742	320	128	1,431	..	..	649	..	345	437	1,431	5,794	10,844	4,096	818	4,050	25,602	16	..	222	221	..	..	..	..	..	2	..
Goondiwindi ..	16	..	..	..	6	..	..	59	..	12	50	112	356	..	14	..	21	391	..	..	1	..	..	..	..	..	..	1	..
Inglewood	919	208	7	10	133	..	..	58	33	199	39	329	867	865	262	248	417	2,659	..	1	42	13	..	..	..	..	365	*	..
Killarney	9,805	322	80	158	7,081	..	..	77	53	1,741	77	1,948	492	1,964	846	1,413	1,670	6,385	30	..	17	..	..	..	..	..	..	1	..
	[illegible]	1,440	560	333	5,913			476	329	1,728	930	3,463	14,911	19,448	12,799	3,778	9,065	60,001	69	4	476	5	..	..	..	..	..	3	3

Pittsworth	86,612	680	613	260	2,062	..	..	629	69	1,425	922	3,045	12,615	8,449	14,692	3,437	6,955	46,148	6	..	114	61	..	..	..	..	..	*	..
Stanthorpe	..	..	..	..	153	..	..	7	69	167	2	245	151	131	4	180	184	650	192	..	62	..	..	..	..	..	5	1,307	372
Texas	305	..	..	60	178	..	..	..	7	132	17	156	..	85	68	297	183	633	..	..	32	41	..	..	..	..	279	*	..
Toowoomba	18,572	592	894	253	3,413	1	..	531	391	1,877	958	3,757	4,848	8,971	6,149	4,616	8,078	32,662	135	3	128	..	..	..	..	12	..	8	..
Warwick	28,763	1,301	400	434	11,453	..	..	392	315	4,164	862	5,733	1,822	5,511	3,316	4,021	7,102	21,772	83	1	165	..	..	..	..	..	..	31	3
Total Downs ..	343,136	6,299	5,743	2,456	48,860	1	..	4,090	1,469	15,064	6,434	27,057	49,078	65,939	49,559	24,744	49,647	238,967	555	9	1,596	825	..	..	..	12	649	1,362	378
Maranoa Division.																													
Bollon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	..
Dirranbandi	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1	2	..	..	..	..	..	..	2	..
Mitchell	1,200	..	..	..	10	..	..	40	..	..	5	45	..	14	4	..	10	28	..	..	2	..	..	..	..	..	..	*	*
Roma	21,580	..	..	..	59	..	..	545	..	..	146	691	2,328	122	425	9	161	3,045	5	2	23	120	..	..	..	..	..	404	50
St. George	2	..	..	..	..	..	..	29	..	..	..	29	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	4	..
Surat	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	..
Yeulba	..	..	..	..	1	..	..	..	..	1	..	1	7	..	16	1	18	42	2	..	..	..	..	..	..	..	..	5	1
Total Maranoa ..	22,782	..	..	..	70	..	..	614	..	1	151	766	2,335	136	445	10	189	3,115	9	3	28	120	..	..	..	..	..	415	51
South-Western Division.																													
Adavale	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Augathella	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	*
Charleville	..	..	..	..	..	..	..	..	..	*	1	1	10	..	1	..	..	11	*	..	2	..	..	..	..	..	..	1	..
Cunnamulla	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Eulo	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hungerford	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Quilpie	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Thargomindah ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Total South-Western	..	..	..	..	..	..	..	..	..	..	1	1	10	..	1	..	..	11	..	..	2	..	..	..	..	..	..	3	..
Total South Queensland	*369,258*	*7,709*	*5,883*	*2,712*	*142,862*	*2*	..	*5,843*	*4,063*	*49,352*	*11,781*	*71,039*	*54,383*	*120,752*	*84,782*	*51,163*	*114,2[illegible]4*	*425,344*	*9,641*	*2,519*	*22,315*	*10,640*	*40,890*	*33,980*	*761*	*10,607*	*684*	*2,153*	*477*
Port Curtis Division.																													
Banana	1,647	..	..	..	152	..	..	96	70	23	5	194	42	17	62	41	31	193	3	..	16	841	..	..	..	..	..	1	..
Gladstone	9	..	..	..	1,136	..	..	..	4	176	137	317	7	274	245	286	512	1,324	383	18	204	270	..	..	1	17	120	1	..
Monto	46	..	..	10	2,836	..	..	..	..	998	92	1,090	6	1,771	551	2,158	2,564	7,050	115	10	800	3,981	..	..	1	5	..	*	..
Mount Morgan ..	1,952	..	..	10	2,327	..	..	40	..	72	34	146	645	684	612	148	1,371	3,460	72	7	246	35,086	..	..	..	47	..	*	..
Rockhampton ..	3	..	..	..	1,251	..	..	12	36	270	261	579	14	98	170	126	439	847	102	52	178	1,535	..	..	..	623	..	28	5
St. Lawrence ..	..	..	..	..	21	..	..	..	..	13	..	13	..	..	..	24	..	24	8	..	5	7	125	32	..	..	..	..	..
Taroom	..	..	..	..	29	..	..	..	..	..	..	..	2	..	..	5	10	17	1	..	3	..	..	..	..	..	..	*	..
Total Port Curtis	3,657	..	..	20	7,752	..	..	148	110	1,552	529	2,339	716	2,844	1,640	2,788	4,927	12,915	684	87	1,452	41,720	125	32	2	692	120	30	5
Central-Western Division.																													
Alpha	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Aramac	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	..
Barcaldine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	..	..	..	..	..	..	..	..
Blackall	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..
Clermont	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	50	..	..	..	..	..	..	*
Emerald	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	9	..	..	..	..	..	1	2
Longreach	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	1	..
Muttaburra	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Springsure	..	..	..	..	5	..	..	..	..	1	..	1	..	..	..	..	..	..	1	..	3	71	..	..	..	..	..	1	..
Tambo	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	1	2	..	..	..	..	..	..	1	..
Total Central Western	..	..	..	..	7	..	..	..	..	1	..	1	..	..	..	..	..	..	9	1	13	130	..	..	..	..	..	5	2
Far Western Division.																													
Boulia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	..
Diamantina	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Isisford	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	..
Jundah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	..
Windorah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Winton	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	..
Total Far Western ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total Central Queensland ..	*3,657*	..	..	*20*	*7,759*	..	..	*148*	*110*	*1,553*	*529*	*2,340*	*716*	*2,844*	*1,640*	*2,788*	*4,927*	*12,915*	*693*	*88*	*1,465*	*41,850*	*125*	*32*	*2*	*692*	*120*	*35*	*7*

* Less than ½ acre.

a Excluding cut for green fodder.

Table No. 28—*continued.*

GRAIN AND OTHER CROPS—AREAS, 1937. (For Production see Table 31.)

Division.	Grain Crops.							Hay (all Kinds).					Green Forage.						Potatoes.		Pumpkins.	Cotton.	Sugar-cane.[a]		Arrowroot.	Peanuts.	Tobacco.	Grapes.	
			Barley.																										
	Wheat.	Oats.	Malting.	Other.	Maize.	Rye.	Rice.	Wheat.	Oats.	Lucerne.	Other.	Total.	Wheat.	Oats.	Sorghum.	Lucerne.	Other.	Total.	English.	Sweet.			Cut for Crushing.	Other.				Bearing.	Not Bearing.
Edgecumbe Division.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.
Ayr	..	..	..	..	27	..	..	..	..	..	..	..	..	..	21	..	130	151	14	1	22	7	24,169	17,799	..	1	2	*	..
Bowen	..	..	..	..	39	..	..	..	..	..	..	..	..	..	99	..	124	223	60	5	416	57	151	69	..	1	129	*	..
Cape River	..	..	..	..	8	..	..	..	..	..	..	..	..	..	..	..	..	..	9	3	10	..	..	..	..	1	..	2	1
Charters Towers ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	3	2	6	..	..	..	..	..	..	24	3
Collinsville	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	1	..	1	..	..	..	..	..	13	..	..
Mackay	..	..	..	..	96	..	..	..	..	..	2	2	1	4	28	..	1,279	1,312	56	3	32	42	66,823	25,464	..	..	255	1	2
Proserpine	..	..	..	..	1	..	..	..	..	..	..	..	..	..	5	..	40	45	4	..	2	..	8,838	4,213	..	..	..	..	..
Ravenswood ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..
Townsville	..	..	..	..	2	..	..	..	..	..	5	5	..	..	21	..	21	42	76	1	27	..	237	178	..	2	57	..	..
Total Edgecumbe..	..	..	..	..	173	..	..	..	..	..	7	7	1	4	175	1	1,594	1,775	223	15	516	106	100,218	47,723	..	5	458	27	6
Rockingham Division.																													
Atherton	1	..	40	..	22,410	..	..	11	12	178	28	229	6	127	223	48	473	877	56	116	10	..	..	..	1	482	6	*	..
Cairns	..	..	..	..	8	..	..	..	..	..	..	..	..	..	7	..	119	126	2	6	2	..	31,719	5,492	..	..	..	..	..
Cardwell	..	..	..	..	6	..	..	..	..	..	..	..	4	..	..	..	57	61	6	3	9	6	9,456	2,701	..	..	..	..	..
Chillagoe	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..
Douglas	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	18	18	..	..	..	..	6,781	1,883	..	..	..	..	..
Herberton	12	..	..	..	629	..	..	..	2	1	..	3	1	8	*	3	44	56	23	3	23	..	..	..	..	2	21	7	2
Ingham	..	..	..	..	142	..	..	..	..	..	1	1	..	..	10	..	157	167	74	9	5	..	26,836	8,258	10	..	10	..	..
Innisfail	..	..	..	..	27	..	..	..	..	..	..	..	..	..	5	..	84	89	10	1	7	1	29,106	3,640	..	..	..	..	..
Mareeba	7	..	..	..	171	..	..	2	..	..	8	10	5	8	40	1	58	112	79	7	29	87	..	..	..	460	2,513	..	..
Total Rockingham	20	..	40	..	23,393	..	..	13	14	179	37	243	16	143	285	52	1,010	1,506	250	146	86	94	103,898	21,974	11	944	2,550	7	2
Peninsula Division.																													
Coen	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cook	..	..	..	..	44	..	..	..	..	..	..	..	..	..	..	..	..	..	3	3	2	2	..	..	..	122	..	..	..
Somerset	..	..	..	..	10	..	..	..	..	..	..	..	..	..	..	..	..	..	3	2	5	..	..	..	..	..	..	..	..
Total Peninsula ..	..	..	..	..	54	..	..	..	..	..	..	..	..	..	..	..	..	..	6	5	7	2	..	..	..	122	..	..	..
North-Western Division.																													
Burke..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	..	..	..	..	..	..	..	..
Camooweal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cloncurry	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..
Croydon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Etheridge	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	20	20	..	..	..	..	..	..	..	..	..	*	..
Hughenden	..	..	..	..	..	..	..	..	..	*	..	*	..	..	..	..	..	..	2	..	1	..	..	..	..	*	..	..	..
Julia Creek	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mount Isa	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Norman	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Richmond	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total North-Western	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	20	20	4	1	2	..	..	..	..	..	..	2	..
Total North Queensland ..	*20*	..	*40*	..	*23,622*	..	..	*13*	*14*	*179*	*44*	*250*	*17*	*147*	*460*	*53*	*2,624*	*3,301*	*483*	*167*	*611*	*202*	*204,116*	*69,697*	*11*	*1,071*	*3,008*	*36*	*8*
Grand Total, State—																													
1937	372,935	7,709	5,923	2,732	174,243	2	..	6,004	4,187	51,084	12,354	73,629	55,116	123,743	86,882	54,004	121,815	441,560	10,817	2,774	24,391	52,692	245,131	103,709	774	12,370	3,812	2,224	492
1936	283,648	7,932	4,319	2,333	181,266	27	..	5,259	3,218	42,526	11,755	62,758	72,553	127,582	39,349	58,761	131,537	429,782	13,448	2,906	20,605	62,200	245,918	92,768	865	17,311	3,973	1,944	557
Increase, 1937 ..	89,287	..	1,604	399	..	..	..	745	969	8,558	599	10,871	..	..	47,533	..	..	11,778	..	..	3,786	..	..	10,941	..	..	..	280	..
Decrease, 1937 ..	..	223	..	..	7,023	25	..	..	..	..	..	..	17,437	3,839	..	4,757	9,722	..	2,631	132	..	9,508	787	..	91	4,941	161	..	65

* Less than ½ acre.

[a] Excluding cut for Green Fodder.

FRUIT CROPS—AREAS, 1937. (For Production see Table 82.)

Division.	Apples.		Apricots.		Bananas.		Cherries.	Custard Apples.		Figs.	Gooseberries (Cape).	Lemons.		Mangoes.		Nectarines.		Oranges and Mandarins.		Passion Fruit.	Papaws.		Peaches.		Pears.		Persimmons.	Pineapples.		Plums.		Quinces.	Strawberries.	Water Melons and Rock Melons.	Small Orchards.
	Bearing.	Not Bearing.	Bearing.	Not Bearing.	Bearing.	Not Bearing.		Bearing.	Not Bearing.			Bearing.	Not Bearing.	Bearing.	Not Bearing.	Bearing.	Not Bearing.	Bearing.	Not Bearing.		Bearing.	Not Bearing.	Bearing.	Not Bearing.	Bearing.	Not Bearing.		Bearing.	Not Bearing.	Bearing.	Not Bearing.				
Moreton Division.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.
Brisbane (North) ..	*	*	*	*	146	135	..	10	3	*	..	1	*	16	1	..	..	5	6	18	127	113	48	19	..	2	*	250	147	1	*	..	9	160	2
Brisbane (South) ..	..	..	..	..	*	..	..	23	6	35	1	*	2	3	2	..	..	6	6	1	55	49	*	*	..	..	..	138	64	..	6	..	5	4	3
Beaudesert	*	*	*	*	11	..	..	..	..	..	..	1	1	*	*	..	..	24	10	*	*	..	1	*	*	*	..	..	..	*	*	..	..	3	2
Caboolture	..	..	..	..	233	112	..	2	2	..	1	5	6	3	1	..	..	89	39	9	14	22	*	..	..	..	..	322	173	..	..	..	3	4	6
Cleveland	..	*	..	..	71	50	..	70	11	*	..	9	7	4	*	..	..	10	1	39	30	23	*	*	..	..	1	224	132	..	..	..	79	12	7
Crow's Nest	*	*	1	*	..	..	..	..	*	*	..	21	7	..	2	..	..	20	5	..	..	..	1	*	*	*	..	..	..	1	*	..	..	*	2
Dugandan	*	*	..	..	..	1	..	*	*	*	1	1	*	*	*	..	..	2	1	1	1	..	2	*	..	..	..	1	..	*	*	..	..	2	1
Esk	..	*	..	..	19	6	..	..	..	..	..	9	7	*	*	..	..	44	8	7	..	1	*	*	*	*	..	..	..	..	*	..	..	*	2
Gatton	..	*	*	*	..	..	..	*	..	..	..	*	*	..	*	..	..	86	38	..	..	..	1	*	..	*	..	*	3	*	*	..	..	14	2
Harrisville	..	*	*	*	..	..	..	..	..	*	..	*	*	*	*	..	..	2	*	..	..	..	1	*	*	*	..	..	..	..	..	..	..	1	2
Ipswich	..	..	..	..	..	..	..	..	..	..	..	..	*	1	*	..	..	9	1	..	..	..	..	*	..	..	..	24	3	..	..	..	..	7	1
Kilcoy	..	..	..	..	8	12	..	..	..	..	..	*	*	*	..	..	..	2	*	..	*	..	*	*	..	..	..	..	..	..	..	..	..	1	1
Laidley	..	*	*	*	2	..	..	..	*	..	..	*	*	*	*	..	..	2	1	..	1	1	1	*	*	..	..	2	1	*	*	..	..	..	2
Logan	..	..	..	..	430	218	..	78	8	..	..	1	11	34	4	..	..	28	6	82	4	1	..	*	*	..	..	33	29	..	..	..	..	6	1
Lowood	..	..	..	*	..	..	..	1	*	..	..	1	*	..	*	..	..	20	1	..	..	..	*	*	..	..	..	20	17	..	..	..	..	22	*
Marburg	..	..	..	..	..	..	..	..	..	..	4	*	..	1	*	..	..	1	*	..	..	..	*	1	..	..	..	13	5	..	..	..	..	..	1
Maroochy	..	..	..	..	922	553	..	7	2	*	1	7	10	10	4	..	..	796	244	43	37	37	1	*	*	..	*	1,792	1,014	*	1	..	78	11	34
Redcliffe	..	..	..	..	164	155	..	1	1	*	..	5	*	5	1	..	..	9	2	8	*	5	*	..	..	..	..	91	64	*	..	..	*	45	20
Rosewood	..	*	..	..	..	..	..	..	..	..	..	*	*	..	..	..	..	*	*	..	..	..	*	*	..	..	..	..	..	..	*	..	..	*	1
Southport	*	*	..	*	1,931	886	..	3	1	*	..	*	1	1	*	*	..	61	12	36	2	4	*	*	..	*	*	8	6	*	*	..	*	6	37
Toogoolawah ..	..	..	*	*	..	..	..	..	..	..	..	*	*	..	*	..	..	5	1	..	..	..	*	*	..	..	..	..	..	..	..	..	..	6	2
Woodford	..	..	*	..	343	81	..	..	..	..	..	1	*	*	*	..	..	5	*	*	*	..	*	*	*	*	..	16	4	*	..	..	..	*	2
Wynnum	..	..	..	..	16	7	..	2	1	..	..	*	..	*	..	..	..	..	..	*	9	27	..	..	..	..	..	49	36	..	..	..	5	9	5
Oakey-Cooyar ..	*	*	1	*	..	..	..	..	..	*	..	*	*	..	..	..	..	1	1	..	..	..	*	*	*	*	..	..	..	*	*	..	..	*	2
Toowoomba-Helidon	..	..	*	*	..	1	..	..	..	*	..	1	2	1	*	..	..	34	15	..	..	..	1	*	..	..	..	..	..	*	*	..	..	12	1
Total Moreton ..	..	..	2	..	4,296	2,217	..	197	35	35	8	63	54	79	15	..	..	1,261	398	244	280	283	57	20	..	2	1	2,983	1,698	2	7	..	179	325	139
Wide Bay Division.																																			
Biggenden	..	..	..	..	14	2	..	*	..	..	..	*	9	*	1	..	..	8	2	1	*	..	*	..	..	..	..	6	1	*	..	..	..	3	1
Bundaberg	*	*	..	..	36	24	..	6	3	..	..	1	3	8	*	..	..	72	32	1	*	..	1	*	*	*	..	45	22	*	*	..	4	13	2
Childers	*	*	..	..	*	..	..	*	*	..	..	*	*	4	*	..	..	60	4	..	*	..	*	*	..	..	..	26	2	*	..	..	..	*	2
Eidsvold	*	*	*	..	..	1	..	..	..	*	..	1	34	..	..	..	..	5	6	..	..	..	1	*	*	..	..	*	1	1	..	..	..	50	*
Gayndah	..	*	*	*	15	2	..	*	1	..	..	69	29	1	1	..	..	190	68	8	1	1	1	*	*	..	*	7	3	*	*	..	..	5	2
Gin Gin	*	*	..	..	3	..	..	1	*	..	..	1	*	4	1	..	..	11	2	..	..	..	1	*	*	..	*	3	..	*	*	..	*	2	2
Gympie	*	*	*	*	397	411	..	1	1	*	..	3	2	13	6	..	..	51	24	4	24	22	1	1	1	*	*	540	362	*	*	..	1	13	17
Kilkivan	*	..	*	..	..	..	..	..	..	..	..	*	*	*	*	..	..	1	*	..	..	..	*	*	..	..	..	..	..	..	..	..	..	*	2
Maryborough ..	..	1	..	2	10	4	..	2	1	..	..	2	5	19	1	..	..	424	118	3	11	5	*	*	*	*	..	106	40	1	*	..	..	19	8
Mount Perry ..	..	..	..	..	2	..	..	*	..	..	..	*	*	*	*	..	..	4	*	..	..	..	..	*	..	..	..	1	..	..	..	..	..	*	2
Nanango	*	*	1	*	..	..	..	*	*	..	..	2	1	1	..	..	..	4	2	*	..	..	2	*	*	*	*	2	2	1	*	..	..	3	3
Tiaro	*	*	..	..	15	15	..	1	*	..	..	1	*	6	1	..	..	19	4	*	10	4	1	*	*	*	*	26	14	*	*	..	..	3	2
Wienholt	*	*	1	*	..	..	..	*	*	..	..	1	*	*	*	..	..	8	3	*	..	..	2	*	*	*	..	3	..	*	*	..	..	*	7
Total Wide Bay ..	..	1	2	2	492	459	..	11	6	..	..	81	83	56	11	..	..	857	265	17	46	32	10	1	1	..	..	765	447	3	..	..	5	111	50
Downs Division.																																			
Allora	*	*	1	*	..	..	..	..	..	..	..	1	*	..	..	..	..	50	10	..	..	..	1	..	*	*	..	..	..	*	*	..	..	1	1
Chinchilla	*	*	*	*	..	..	..	..	..	..	..	*	*	..	..	..	..	2	1	..	..	..	*	*	*	*	..	..	..	*	*	..	..	5	2
Clifton	*	*	1	*	..	..	..	..	..	..	..	*	*	..	..	..	..	1	*	..	..	..	1	*	*	*	..	..	..	1	*	..	..	*	2
Condamine	..	..	*	*	..	..	..	..	..	*	..	*	*	..	..	..	..	3	2	..	..	..	1	1	*	*	..	..	..	*	*	..	..	*	2
Dalby	*	*	*	*	..	..	..	..	..	*	..	*	*	..	..	*	..	5	2	..	*	..	1	*	*	*	..	..	..	*	*	..	..	3	4
Goondiwindi ..	..	..	..	..	..	..	..	..	..	*	..	1	*	..	..	..	..	16	2	..	..	..	1	*	..	..	..	..	..	..	..	..	..	*	1
Inglewood	*	*	1	*	..	..	..	..	..	..	..	*	*	..	..	..	..	*	*	..	..	..	1	1	..	*	..	..	..	1	*	..	..	1	3
Killarney	*	*	1	1	..	..	..	..	..	..	..	*	*	..	..	..	..	*	*	*	..	..	1	*	*	*	..	..	..	*	*	..	..	1	2
Oakey	*	*	1	*	..	..	..	..	..	*	..	1	*	..	..	..	..	3	1	..	..	..	1	*	*	*	..	..	..	1	*	..	..	1	2
Pittsworth	*	*	*	*	..	..	..	..	..	*	..	*	*	..	..	..	..	*	1	..	..	..	*	1	*	*	..	..	..	*	*	..	..	..	3
Stanthorpe	3,158	2,231	120	83	..	..	8	..	..	..	..	10	7	..	..	48	6	*	..	2	..	..	983	215	222	84	..	..	..	900	256	11	..	3	3
Texas	..	..	*	*	..	..	..	..	..	..	..	*	*	..	..	..	..	*	*	..	..	..	*	*	..	*	..	..	..	*	*	..	..	1	2
Toowoomba	1	*	8	1	..	..	..	..	..	*	..	3	3	..	..	..	..	15	7	*	*	..	5	1	1	*	*	..	..	3	1	..	..	..	1
Warwick	155	81	46	11	..	..	..	..	..	..	..	*	*	..	..	*	..	1	*	..	..	..	13	2	8	1	..	..	..	32	2	1	..	4	1
Total Downs ..	3,314	2,312	179	96	..	..	8	..	..	..	..	16	10	..	..	48	6	96	26	2	..	..	1,009	221	231	85	..	..	..	938	259	12	..	20	29

* Less than ½ acre. When these areas in any district aggregate approximately 1 acre or more they are included under "Small Orchards."

Table No. 29—*continued.*

FRUIT CROPS—AREAS, 1937. (For Production see Table 32.)

Division.	Apples.		Apricots.		Bananas.		Cherries.	Custard Apples.		Figs.	Gooseberries (Cape.)	Lemons.		Mangoes.		Nectarines.		Oranges and Mandarins.		Passion Fruit.	Papaws.		Peaches.		Pears.		Persimmons.	Pineapples.		Plums.		Quinces.	Strawberries.	Water Melons and Rock Melons.	Small Orchards
	Bearing.	Not Bearing.	Bearing.	Not Bearing.	Bearing.	Not Bearing.		Bearing.	Not Bearing.			Bearing.	Not Bearing.	Bearing.	Not Bearing.	Bearing.	Not Bearing.	Bearing.	Not Bearing.		Bearing.	Not Bearing.	Bearing.	Not Bearing.	Bearing.	Not Bearing.		Bearing.	Not Bearing.	Bearing.	Not Bearing.				
	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.
Maranoa Division.																																			
Bollon	..	..	..	..	..	..	..	..	..	..	..	*	..	..	..	..	..	*	*	..	..	..	*	*	..	..	..	..	..	..	*	..	..	..	1
Dirranbandi	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	*	..	..	..	..	*	..	..	..	..	*
Mitchell	..	*	..	*	..	..	..	..	..	..	..	*	*	..	..	..	..	4	1	..	..	..	*	*	*	*	..	..	..	..	*	..	..	*	2
Roma	..	*	1	*	..	..	..	..	..	*	..	1	*	..	..	..	..	48	19	..	..	..	2	*	*	*	..	..	..	*	*	..	..	2	1
St. George	..	*	*	..	..	..	..	..	..	*	..	*	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	*	..	..	..	1	2
Surat	..	..	*	*	..	..	..	..	..	..	..	*	..	..	..	..	..	2	..	..	..	..	*	..	..	..	..	..	..	*	..	..	..	..	2
Yeulba	..	*	..	..	..	..	..	..	*	..	..	..	*	..	..	..	..	2	1	..	..	..	*	*	..	*	..	..	..	..	..	..	..	..	2
Total Maranoa	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	58	21	..	..	..	4	..	..	..	..	..	..	..	..	..	..	3	10
South-Western Division.																																			
Adavale	..	..	..	..	..	..	..	..	..	..	..	*	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*
Augathella	..	..	*	..	..	..	..	..	..	..	..	*	..	..	..	..	..	1	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Charleville	..	..	*	..	..	..	..	..	..	..	..	1	*	..	..	..	..	16	7	..	..	..	*	..	..	..	..	..	..	..	..	..	..	*	2
Cunnamulla	..	..	..	..	..	..	..	..	..	..	..	*	..	..	..	..	..	9	..	..	..	..	*	..	..	..	..	..	..	..	..	..	..	..	1
Eulo	..	..	..	..	..	..	..	..	..	..	..	*	..	..	..	..	..	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*
Hungerford	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Quilpie	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Thargomindah	..	..	..	*	..	..	..	..	..	..	..	*	*	..	..	..	..	*	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*
Total South-Western	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	27	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4
Total South Queensland	*3,314*	*2,313*	*184*	*98*	*4,788*	*2,676*	*8*	*208*	*41*	*35*	*8*	*162*	*147*	*135*	*26*	*48*	*46*	*2,299*	*718*	*263*	*326*	*315*	*1,080*	*242*	*232*	*87*	*1*	*3,748*	*2,145*	*943*	*266*	*12*	*184*	*459*	*232*
Port Curtis Division.																																			
Banana	..	..	..	..	..	..	..	..	..	..	..	*	*	..	..	..	..	2	1	..	..	..	*	*	..	..	..	..	..	*	..	..	..	..	*
Gladstone	..	..	..	..	68	31	..	2	*	..	..	2	1	5	1	..	..	34	9	3	77	39	1	*	..	..	*	12	12	*	*	..	..	22	1
Monto	..	..	*	..	..	..	..	..	..	..	..	*	*	..	..	..	..	2	*	..	..	..	*	*	..	..	..	..	..	*	..	..	..	3	2
Mount Morgan	..	..	..	..	..	..	..	1	*	..	..	1	*	4	*	..	..	18	5	..	*	..	1	*	..	..	..	2	1	..	..	..	..	6	1
Rockhampton	..	..	..	*	190	81	..	12	3	..	..	5	5	29	2	..	..	212	33	13	14	15	1	*	..	..	..	144	57	..	..	..	1	32	2
St. Lawrence	..	..	..	..	9	1	..	*	*	..	..	*	..	2	*	..	..	2	1	1	..	..	*	..	..	..	..	10	7	..	..	..	..	..	*
Taroom	..	..	..	..	..	..	..	..	..	*	..	*	..	..	..	..	..	3	2	..	..	..	*	..	*	..	..	..	..	*	..	..	..	..	*
Total Port Curtis	..	..	..	..	267	113	..	15	3	..	..	8	6	40	3	..	..	273	51	17	91	54	3	..	..	..	..	168	77	..	..	..	1	64	6
Central-Western Division.																																			
Alpha	..	..	..	..	..	..	..	..	..	..	..	*	..	..	..	..	..	16	..	..	..	..	*	..	..	..	..	..	..	..	..	..	..	..	*
Aramac	..	..	..	..	..	..	..	..	..	..	..	*	*	*	..	..	..	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	*
Barcaldine	..	..	..	..	..	..	..	..	..	..	..	*	*	..	..	..	..	*	*	..	*	..	..	..	..	..	..	..	..	..	..	..	..	*	1
Blackall	..	..	..	..	..	..	..	..	..	..	..	*	*	*	..	..	..	4	5	..	..	..	1	*	..	..	..	..	..	..	..	..	..	2	1
Clermont	..	..	..	..	..	..	..	..	..	..	..	*	*	..	..	..	..	2	4	..	..	..	*	..	..	..	..	..	..	..	..	..	..	1	1
Emerald	..	..	..	..	*	..	..	*	..	..	..	5	*	..	*	..	..	40	5	..	*	..	..	..	..	..	..	..	..	..	..	..	..	*	*
Longreach	..	..	..	..	..	..	..	..	..	..	..	*	*	*	..	..	..	1	1	..	..	..	*	*	..	..	..	..	..	..	..	..	..	3	1
Muttaburra	..	..	..	..	..	..	..	..	..	..	..	*	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*
Springsure	..	..	..	..	..	..	..	..	..	..	..	1	*	*	..	..	..	6	*	..	*	..	1	*	..	..	..	..	..	..	..	..	..	*	1
Tambo	..	..	..	..	..	..	..	..	..	..	..	*	*	..	..	..	..	*	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	1
Total Central-Western	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..	..	..	70	15	..	..	..	2	..	..	..	..	..	..	..	..	..	..	7	6

Far Western Division.																																			
Boulia	..	..	..	..	..	..	..	..	..	..	..	*	*	..	..	..	..	*	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	2
Diamantina	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Isisford	..	..	..	..	..	..	..	..	..	..	..	*	..	..	..	..	..	*	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Jundah	..	..	..	..	..	..	..	..	..	..	..	*	*	..	..	..	..	*	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Windorah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Winton	..	..	..	..	..	..	..	..	..	..	..	..	..	*	..	..	..	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Total Far-Western	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	5
Total Central Queensland ..	..	..	..	..	*267*	*113*	..	*15*	*3*	..	..	*14*	*6*	*40*	*3*	..	..	*343*	*66*	*17*	*91*	*54*	*5*	..	..	..	..	*168*	*77*	..	..	..	*1*	*73*	*17*
Edgecumbe Division.																																			
Ayr	..	..	..	..	24	13	..	1	*	..	..	1	1	3	1	..	..	2	4	..	*	..	..	..	..	..	..	2	8	..	..	..	..	2	1
Bowen	..	..	..	..	7	1	..	2	1	..	..	2	*	122	47	..	..	34	8	..	*	..	..	..	..	..	..	148	59	..	..	..	..	14	3
Cape River	..	..	..	..	..	..	..	..	..	..	..	2	*	*	..	..	..	17	11	..	..	4	1	*	..	..	..	..	..	..	..	..	..	3	3
Charters Towers ..	..	..	..	..	..	..	..	*	*	..	..	3	1	14	1	..	..	67	15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Collinsville	..	..	..	..	..	..	..	*	*	..	..	*	*	*	*	..	..	2	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	1
Mackay	..	*	..	..	33	30	..	10	3	..	..	11	3	46	7	..	..	64	36	*	3	11	1	*	*	..	..	17	6	..	..	..	*	4	2
Proserpine	..	..	..	..	..	..	..	2	*	..	..	3	*	9	2	..	..	12	3	..	*	..	*	..	..	..	*	*	..	..	..	..	..	1	2
Ravenswood ..	..	..	..	..	..	..	..	..	*	..	..	*	*	*	*	..	..	5	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*
Townsville	..	..	..	..	28	12	..	2	*	..	..	6	1	23	11	..	..	33	4	*	10	*	*	..	..	..	..	85	14	..	..	..	1	17	3
Total Edgecumbe ..	..	..	..	..	92	56	..	17	4	..	..	28	6	217	69	..	..	236	84	..	13	15	2	..	..	..	..	252	87	..	..	..	1	42	16
Rockingham Division.																																			
Atherton	*	1	..	..	5	..	..	1	1	..	..	3	1	8	1	..	..	16	6	..	1	..	*	*	..	..	..	5	1	*	*	..	*	*	4
Cairns	..	..	..	..	75	21	..	1	*	..	..	3	1	6	1	..	..	80	14	..	4	2	*	..	..	..	..	24	4	..	..	..	..	2	*
Cardwell	..	..	..	..	36	14	..	*	*	..	..	1	1	1	1	..	..	197	93	..	1	..	..	..	..	..	..	8	2	..	..	..	..	6	1
Chillagoe	..	..	..	..	..	..	..	1	*	..	..	*	*	1	*	..	..	*	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Douglas	..	..	..	..	*	..	..	1	*	..	..	1	1	4	*	..	..	6	3	..	*	..	..	..	..	..	..	*	..	..	..	..	..	*	1
Herberton	1	*	*	*	..	..	..	*	*	..	..	1	*	*	*	..	..	4	3	..	..	..	*	*	*	..	*	..	..	2	2	*	..	1	3
Ingham	..	..	..	..	6	*	..	2	1	..	..	7	1	19	1	..	..	21	5	*	1	..	1	*	*	..	..	14	2	..	..	..	..	3	1
Innisfail	..	..	..	..	3	..	..	*	*	..	..	2	1	1	*	..	..	10	8	1	*	1	..	..	..	..	..	*	..	..	..	..	..	2	2
Mareeba	..	..	..	..	5	2	..	1	1	*	..	1	3	6	2	..	..	11	16	3	1	*	*	*	..	..	..	5	2	..	..	..	..	23	1
Total Rockingham	1	1	..	..	130	37	..	7	3	..	..	19	9	46	6	..	..	345	148	4	8	3	1	..	..	..	..	56	11	2	2	..	..	37	15
Peninsula Division.																																			
Coen	..	..	..	..	..	..	..	*	..	..	..	..	..	1	..	..	..	*	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*
Cook	..	..	..	..	2	..	..	1	..	..	..	*	..	5	..	..	..	54	6	..	*	..	..	..	..	..	..	*	..	..	..	..	..	*	1
Somerset	..	..	..	..	7	4	..	..	..	..	..	..	*	2	*	..	..	*	*	..	3	2	..	..	..	..	..	4	1	..	..	..	..	..	1
Total Peninsula ..	..	..	..	..	9	4	..	1	..	..	..	..	..	8	..	..	..	54	6	..	3	2	..	..	..	..	..	4	1	..	..	..	..	..	2
North-Western Division.																																			
Burke	..	..	..	..	2	..	..	*	..	..	..	..	*	1	1	..	..	*	*	..	1	..	..	..	..	..	..	..	..	..	..	..	..	*	2
Camooweal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cloncurry	..	..	..	..	..	..	..	..	..	..	..	2	..	1	..	..	..	7	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*
Croydon	..	..	..	..	*	..	..	*	..	..	..	*	..	..	..	..	..	*	..	..	..	..	..	..	..	..	..	*	..	..	..	..	..	..	1
Etheridge	..	..	..	..	..	..	..	..	..	..	..	*	*	*	..	..	..	3	*	..	*	..	..	*	..	..	..	..	..	..	..	..	..	..	1
Hughenden	..	..	..	..	*	..	..	..	..	..	..	3	*	*	..	..	..	10	1	..	..	..	..	*	..	..	..	..	..	..	..	..	..	1	1
Julia Creek	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mount Isa	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Norman	..	..	..	..	*	..	..	..	..	..	..	..	..	1	*	..	..	*	..	..	..	..	..	..	..	..	..	*	..	..	..	..	..	*	1
Richmond	..	..	..	..	..	..	..	..	..	..	..	*	..	..	..	..	..	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*
Total North-Western	..	..	..	..	2	..	..	..	..	..	..	5	..	3	1	..	..	20	5	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	6
Total North Queensland ..	*1*	*1*	..	..	*233*	*97*	..	*25*	*7*	..	..	*52*	*15*	*274*	*76*	..	..	*655*	*243*	*4*	*25*	*20*	*3*	..	..	..	..	*312*	*99*	*2*	*2*	..	*1*	*80*	*39*
Grand Total, State—																																			
1937 ..	3,315	2,314	184	98	5,288	2,886	8	248	51	35	8	228	168	449	105	48	6	3,297	1,027	284	442	389	1,088	242	232	87	1	4228	2,321	945	268	12	186	612	288
1936 ..	3,211	2,147	198	106	4,983	2,322	13	197	105	29	6	215	169	273	90	35	7	2,750	784	181	513	363	1,152	271	311	77	6	4408	1,906	967	282	10	169	606	272
Increase, 1937 ..	104	167	..	..	305	564	..	51	..	6	2	13	..	176	15	13	..	547	243	103	..	26	..	..	..	10	..	..	415	..	..	2	17	6	16
Decrease, 1937 ..	..	..	14	8	..	..	5	..	54	..	..	..	1	..	..	..	1	..	..	..	71	..	64	29	79	..	5	180	..	22	14	..	..	..	..

* Less than ½ acre. When these areas in any district aggregate approximately 1 acre or more they are included under "Small Orchards."

Table No. 30.

VEGETABLE AND MISCELLANEOUS CROPS, AREAS; AREA UNDER CROP, &c., 1937. (For Production see Table 33.)

Division.	Vegetables.										Miscellaneous Crops.													Total Areas, &c.	
	Beans.					Peas.																			
	Green.	Dried.	Cabbages and Cauliflowers.	Cucumbers.	Onions.	Green.	Dried.	Tomatoes.	Turnips.	Market Gardens.	Canary Seed.	Coffee.	Coconuts.	Cow Peas.	Grass Seed.	Linseed.	Lucerne Seed.	Mangel Wurzel.	Millet (Broom).	Millet (Seed.)	Panicum Seed.	Sunflower Seed.	Other.	Total Extent of Land under Crop.	Total Area of Petty Sessions Districts.
	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac	Ac.	Ac.	Ac.	Ac.	Ac.	Sq. Mls.
Moreton Division.																									
Brisbane (North)	148	27	269	56	3	163	13	385	6	181	..	..	..	..	..	..	..	6	1	..	..	..	..	6,495	336
Brisbane (South)	25	7	90	17	1	24	1	84	4	113	..	..	..	..	..	..	..	..	..	..	..	..	..	1,735	213
Beaudesert	5	..	14	..	..	2	..	7	3	5	..	..	..	..	..	..	..	141	..	..	..	..	..	16,363	968
Caboolture	3	..	2	5	..	4	1	8	1	11	..	..	..	..	..	..	..	4	..	..	..	..	..	1,897	304
Cleveland	158	17	261	145	..	21	2	627	2	104	..	..	..	..	..	..	..	1	..	..	..	..	..	2,315	200
Crow's Nest	..	..	..	..	..	2	..	..	2	1	..	..	..	1	..	..	..	11	..	..	..	..	..	19,775	365
Dugandan	40	2	29	21	2	17	*	32	11	12	..	..	..	2	3	..	..	100	10	..	20	..	..	24,562	522
Esk	1	..	..	..	..	2	..	..	1	2	..	..	..	..	2	..	..	23	..	..	..	..	..	3,723	563
Gatton	3	..	47	6	645	2	..	4	16	7	..	..	..	..	..	..	..	41	14	..	..	..	..	22,648	504
Harrisville	5	2	2	1	7	4	..	9	3	2	..	..	..	..	..	..	..	71	1	..	..	..	..	16,507	230
Ipswich	11	4	4	*	1	11	2	10	1	19	..	..	..	..	..	..	..	7	8	..	..	..	..	3,399	228
Kilcoy	3	..	..	..	..	..	..	2	4	1	..	..	..	..	..	..	..	52	..	..	..	..	..	2,498	305
Laidley	3	1	4	..	337	5	..	5	7	1	..	..	..	2	..	..	..	84	122	..	..	1	..	19,454	222
Logan	85	3	108	23	1	150	3	136	4	32	..	..	..	..	..	..	..	1	2	..	..	..	..	5,938	239
Lowood	2	..	..	..	353	3	..	1	24	26	..	..	..	..	19	..	..	105	..	..	..	..	..	13,501	208
Marburg	16	..	1	1	..	27	..	45	..	..	..	..	..	..	..	..	..	67	..	..	..	..	..	7,967	53
Maroochy	189	60	2	35	..	23	1	36	2	23	1	10	..	..	..	..	..	8	..	..	..	..	2*a*	14,514	702
Redcliffe	16	3	63	17	..	17	3	46	*	15	..	..	..	1	..	..	..	..	..	..	..	..	..	3,671	252
Rosewood	2	2	..	*	7	6	..	6	..	3	..	..	..	..	5	..	..	38	..	..	..	..	..	11,396	264
Southport	38	7	16	1	..	8	..	9	1	17	..	..	..	5	..	..	..	3	..	..	..	..	..	5,381	502
Toogoolawah	1	..	*	..	5	1	..	2	3	1	..	..	..	..	..	..	..	171	..	..	..	..	..	11,838	801
Woodford	*	1	1	1	..	..	..	..	8	7	..	..	..	..	..	..	..	12	..	..	..	..	..	2,441	202
Wynnum	15	2	7	8	..	14	4	80	2	20	..	..	..	..	..	..	..	..	..	..	..	..	..	674	28
Oakey–Cooyar	..	..	2	..	..	..	..	..	..	11	..	..	..	..	..	..	..	14	..	..	..	..	..	5,869	225
Toowoomba–Helidon	3	..	7	1	12	3	..	11	9	1	..	..	..	..	..	..	..	28	..	..	..	..	..	7,816	252
Total Moreton	772	138	929	338	1,374	509	30	1,545	114	615	1	10	..	11	29	..	..	988	158	..	20	1	2*a*	232,377	8,688
Wide Bay Division.																									
Biggenden	*	..	1	1	..	1	..	3	2	9	..	..	..	*	21	..	..	17	..	..	..	..	..	4,475	653
Bundaberg	2	..	19	2	..	5	*	11	..	21	..	..	..	..	..	..	..	2	..	..	..	..	..	36,983	1,460
Childers	1	*	2	1	..	4	..	*	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	15,977	647
Eidsvold	..	..	..	..	..	..	..	..	..	3	..	..	..	4	..	..	..	12	8	..	..	..	..	3,710	2,383
Gayndah	*	..	1	2	1	*	4	2	5	3	..	..	..	582	..	..	..	126	135	..	10	..	..	22,938	3,727
Gin Gin	*	*	1	1	..	1	..	1	*	2	..	..	..	..	..	..	..	..	22	..	..	..	..	8,934	1,056
Gympie	889	117	23	32	..	40	4	22	13	29	..	5	..	..	..	..	..	58	..	..	3	..	..	13,285	1,634
Kilkivan	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	13	..	..	..	..	..	1,658	333
Maryborough	5	*	12	1	..	8	5	19	3	20	..	..	..	..	..	..	..	1	..	..	..	..	..	8,756	1,697
Mount Perry	..	1	1	..	..	*	..	1	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	140	868
Nanango	..	..	..	..	9	..	..	..	7	7	35	..	..	289	201	..	..	60	65	..	1	..	..	63,801	1,679
Tiaro	40	21	1	3	..	6	7	18	5	5	..	..	..	..	..	..	..	14	..	..	..	..	..	4,643	2,607
Wienholt	6	1	8	1	97	27	43	2	1	9	..	..	..	290	41	..	..	238	9	..	10	6	..	66,765	2,345
Total Wide Bay	943	140	69	44	107	92	63	79	37	117	35	5	..	1,165	263	..	..	541	239	..	24	6	..	252,065	21,089
Downs Division.																									
Allora	2	..	..	..	1	..	..	2	..	*	1,833	..	..	..	67	..	..	..	..	..	2,719	..	..	57,108	324
Chinchilla	..	..	..	..	..	..	..	..	..	2	17	..	..	..	..	..	..	..	5	..	..	..	..	8,189	2,311
Clifton	..	..	..	..	..	..	..	..	..	*	6,285	..	..	..	698	..	..	*	..	20	4,693	..	..	100,819	408
Condamine	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	3,243	3,592
Dalby	..	..	1	..	..	..	..	..	..	2	4,518	..	..	..	7	..	..	11	..	35	161	..	..	83,789	6,797
Goondiwindi	..	..	..	..	2	..	..	3	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	554	4,385
Inglewood			1					2		2											20				

Oakey	..	..	..	..	..	..	..	..	..	*	960	..	..	..	672	..	32	4	..	57	441	..	..	142,242	1,173
Pittsworth	..	..	..	..	..	..	..	..	..	*	1,219	..	..	..	494	..	10	2	..	..	660	3	..	141,994	1,862
Stanthorpe	1,068	53	524	12	10	376	16	1,611	6	64	..	..	..	..	..	..	..	..	..	..	..	..	..	15,076	1,110
Texas	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	4	8	..	..	..	1,703	530
Toowoomba	7	..	5	*	1	7	1	2	1	31	1,373	..	..	..	26	..	..	..	19	..	165	..	..	62,118	291
Warwick	43	1	31	1	9	24	..	20	..	6	904	..	..	..	192	..	112	1	..	49	963	..	..	72,853	1,358
Total Downs	1,124	54	566	13	23	409	17	1,643	7	119	17,226	..	..	..	2,189	..	154	19	32	169	10,006	3	..	720,595	25,825
Maranoa Division.																									
Bollon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	5,987
Dirranbandi	..	..	..	..	..	..	..	..	..	5	..	..	..	..	..	..	..	..	..	..	..	..	..	14	4,715
Mitchell	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	1,294	10,387
Roma	..	..	2	..	..	..	..	*	2	3	..	..	..	..	..	..	..	..	..	..	..	..	..	26,060	6,394
St. George	..	..	..	..	..	..	..	..	..	*	..	..	..	..	..	..	..	..	..	..	..	..	..	41	3,402
Surat	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	5	4,248
Yeulba	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	59	591
Total Maranoa	..	..	2	..	..	..	..	..	2	13	..	..	..	..	..	..	..	..	..	..	..	..	..	27,474	35,724
South-Western Division.																									
Adavale	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	4,419
Augathella	..	..	..	..	..	..	..	..	..	*	..	..	..	..	..	..	..	..	..	..	..	..	..	2	5,264
Charleville	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	43	9,023
Cunnamulla	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	12	13,557
Eulo	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,476
Hungerford	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,917
Quilpie	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	14,227
Thargomindah	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	5	22,819
Total South-Western	..	..	..	..	..	..	..	..	..	7	..	..	..	..	..	..	..	..	..	..	..	..	..	64	78,702
Total South Queensland	*2,839*	*332*	*1,566*	*395*	*1,504*	*1,010*	*110*	*3,267*	*160*	*871*	*17,262*	*15*	..	*1,176*	*2,481*	..	*154*	*1,548*	*129*	*169*	*10,050*	*10*	2a	*1,232,575*	*170,028*
Port Curtis Division.																									
Banana	2	..	10	1	2	1	..	13	..	1	..	..	..	..	20	..	..	..	..	..	..	..	..	3,101	1,875
Gladstone	26	1	9	9	*	21	2	258	1	11	..	..	..	..	6	..	..	3	..	..	..	..	..	4,467	3,457
Monto	..	..	..	..	5	..	..	..	..	*	..	..	..	16	80	..	..	21	17	..	..	..	..	16,090	1,773
Mount Morgan	6	3	5	1	..	10	..	26	5	5	..	..	..	..	70	..	..	12	258	3	..	..	..	43,797	3,246
Rockhampton	24	6	22	6	2	33	5	77	3	34	..	..	..	..	4	..	..	6	40	..	2	..	..	6,318	13,752
St. Lawrence	1	..	..	..	..	1	*	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	272	7,129
Taroom	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	13	..	..	..	..	68	5,448
Total Port Curtis	59	10	46	17	9	66	7	375	9	52	..	..	..	16	180	..	..	42	328	3	2	..	..	74,113	36,680
Central-Western Division.																									
Alpha	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	16	[illegible]
Aramac	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	2	[illegible]
Barcaldine	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	6	[illegible]
Blackall	2	..	..	..	1	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	21	[illegible]
Clermont	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	61	[illegible]
Emerald	..	1	2	1	..	..	..	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	79	4,731
Longreach	..	..	..	..	..	..	..	..	..	10	..	..	..	..	..	..	..	..	..	..	..	..	..	19	[illegible]
Muttaburra	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	[illegible]
Springsure	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	92	[illegible]
Tambo	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	11	[illegible]
Total Central-Western	2	1	3	1	1	..	..	6	..	20	..	..	..	..	..	..	..	..	..	..	..	..	..	308	84,752
Far Western Division.																									
Boulia	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	5	21,027
Diamantina	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	22,684
Isisford	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	4	7,929
Jundah	..	..	..	..	..	..	..	..	..	*	..	..	..	..	..	..	..	..	..	..	..	..	..	1	10,977
Windorah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	17,832
Winton	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	3	24,325
Total Far Western	..	..	..	..	..	..	..	..	..	6	..	..	..	..	..	..	..	..	..	..	..	..	..	13	104,774
Total Central Queensland	*61*	*11*	*49*	*18*	*10*	*66*	*7*	*381*	*9*	*78*	..	..	..	*16*	*180*	..	..	*42*	*328*	*3*	*2*	..	..	*74,434*	*226,206*

* Less than ½ acre.

a Ginger.

Table No. 30—*continued.*

Vegetable and Miscellaneous Crops, Areas; Area under Crop, &c., 1937. (For Production see Table 33.)

Division.	Vegetables.										Miscellaneous Crops.													Total Areas, &c.	
	Beans.					Peas.																			
	Green.	Dried.	Cabbages and Cauliflowers.	Cucumbers.	Onions.	Green.	Dried.	Tomatoes.	Turnips.	Market Gardens.	Canary Seed.	Coffee.	Coconuts.	Cow Peas.	Grass Seed.	Linseed.	Lucerne Seed.	Mangel Wurzel.	Millet (Broom).	Millet (Seed.)	Panicum Seed.	Sunflower Seed.	Other.	Total Extent of Land under Crop.	Total Area of Petty Sessions Districts.
	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Ac.	Sq. Mls.
Edgecumbe Division.																									
Ayr	1	..	1	..	..	..	..	10	..	*	..	..	..	..	..	..	..	..	..	..	..	..	..	42,268	2,103
Bowen	2	..	3	93	*	1	..	1,424	1	12	..	..	..	..	..	..	..	10	..	..	..	..	..	3,144	1,900
Cape River	..	..	4	1	..	..	..	1	1	4	..	..	..	..	..	..	..	..	..	..	..	..	..	86	8,083
Charters Towers	..	..	2	*	..	1	..	3	..	5	..	..	..	..	..	..	..	..	..	..	..	..	..	153	9,921
Collinsville	..	..	1	1	..	..	..	2	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	26	6,310
Mackay	1	8	4	3	1	2	*	15	*	7	..	..	..	..	..	..	..	*	..	..	..	..	..	94,416	8,003
Proserpine	..	..	1	1	..	..	..	8	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	13,148	829
Ravenswood	..	..	..	..	..	..	..	*	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	9	1,152
Townsville	9	3	6	11	..	..	..	73	2	20	..	..	..	..	..	..	..	..	2	..	..	..	..	1,003	2,619
Total Edgecumbe	13	11	22	110	1	4	..	1,536	4	51	..	..	..	..	..	..	..	10	2	..	..	..	..	154,253	40,920
Rockingham Division.																									
Atherton	10	*	8	..	..	5	..	5	1	32	..	..	..	84	..	..	..	1	..	..	..	..	..	24,428	682
Cairns	2	..	3	..	..	2	..	3	..	5	..	..	..	..	..	..	..	..	..	..	..	..	..	37,610	842
Cardwell	10	2	2	..	..	..	1	36	..	1	..	..	..	..	*	..	..	..	..	..	..	..	1b	12,663	1,057
Chillagoe	..	..	..	..	..	..	..	..	..	*	..	..	..	..	..	..	..	..	..	..	..	..	..	6	8,667
Douglas	..	..	..	..	..	..	..	..	..	*	..	..	..	..	..	..	..	..	..	..	..	..	..	8,699	787
Herberton	..	..	3	*	..	*	..	1	*	7	..	..	..	..	6	..	..	..	..	..	..	..	..	815	5,345
Ingham	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	35,598	3,277
Innisfail	1	..	3	..	..	..	..	10	..	*	..	..	..	..	..	..	..	..	..	..	..	..	..	32,926	572
Mareeba	3	..	25	1	..	1	..	30	1	5	..	..	..	331	2	..	..	..	..	..	..	..	..	3,957	2,842
Total Rockingham	26	2	44	1	..	8	1	85	2	51	..	..	..	415	10	..	..	1	..	..	..	..	1b	156,702	24,071
Peninsula Division.																									
Coen	..	..	..	..	..	..	..	..	..	*	..	..	..	..	..	..	..	..	..	..	..	..	..	1	25,396
Cook	..	14	*	..	..	..	..	1	..	*	..	..	..	..	..	..	..	..	..	..	..	..	..	260	23,921
Somerset	*	10	1	1	..	..	..	3	1	..	..	..	360	..	..	..	..	..	..	..	..	..	..	420	4,586
Total Peninsula	..	24	1	1	..	..	..	4	1	..	..	..	360	..	..	..	..	..	..	..	..	..	..	681	53,903
North-Western Division.																									
Burke	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	14	18,228
Camooweal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10,246
Cloncurry	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	18	39,468
Croydon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	6,880
Etheridge	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	24	19,640
Hughenden	*	1	1	*	*	..	*	2	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	26	9,944
Julia Creek	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10,647
Mount Isa	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1,395
Norman	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	6	25,570
Richmond	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	13,354
Total North-Western	..	1	1	..	..	..	..	2	..	14	..	..	..	..	..	..	..	..	..	..	..	..	..	93	155,372
Total North Queensland	*39*	*38*	*68*	*112*	*1*	*12*	*1*	*1,627*	*7*	*116*	..	..	*360*	*415*	*10*	..	..	*11*	*2*	..	..	..	*1b*	*311,729*	*274,266*
Grand Total, State—																									
1937	2,939	381	1,683	525	1,515	1,088	118	5,275	176	1,065	17,262	15	360	1,607	2,671	..	154	1,601	759	172	10,052	10	3	1,618,738	670,500
1936	2,668	524	1,584	499	1,046	1,022	165	5,131	237	1,105	16,976	20	300	1,092	2,510	..	210	1,310	776	148	5,221	185	..	1,506,423	670,500
Increase, 1937	271	..	99	26	469	66	..	144	..	..	286	..	60	515	161	..	..	291	..	24	4,831	..	3	112,315	..
Decrease, 1937	..	143	..	..	..	..	47	..	61	40	..	5	..	..	..	..	56	..	17	..	..	175	..	..	..

* Less than ½ acre.

b Cassava.

Table No. 31.

GRAIN AND OTHER CROPS—PRODUCTION, 1937.

(For Areas see Table No. 28.)

Division.	Grain Crops.							Hay (All Kinds).					Potatoes.		Pumpkins.	Cotton (Seed Cotton).	Sugar-cane (Crushed).	Arrow-root (Tubers).	Peanuts.	Tobacco (Cured Leaf).	Grapes.
	Wheat.	Oats.	Barley.		Maize.	Rye.	Rice.	Wheat.	Oats.	Lucerne.	Other.	Total.	English.	Sweet.							
			Malting.	Other.																	
Moreton Division.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Lb.	Tons.	Tons.	Lb.	Lb.	Lb.
Brisbane (North)	..	..	40	..	2,482	..	..	16	35	312	209	572	125	129	764	65	..	2	6,823	..	459,488
Brisbane (South)	..	..	..	..	162	..	..	13	10	164	15	202	10	1	201	66	..	..	150	..	17,600
Beaudesert	20	5	30	..	69,377	..	..	8	67	7,755	735	8,565	398	188	3,694	333	..	158	..	..	1,290
Caboolture	..	..	..	..	1,915	..	..	..	10	60	21	91	72	120	123	648	..	5	..	3,100	1,350
Cleveland	..	..	..	..	65	..	..	..	3	4	2	9	12	5	42	..	..	..	38,410	..	1,900
Crow's Nest	8,822	1,818	1,709	2,203	35,117	..	..	71	148	994	33	1,246	319	22	1,143	..	..	..	40	..	2,529
Dugandan	626	..	120	42	71,749	15	..	169	120	7,698	843	8,830	1,952	157	3,944	10,877	..	..	50	..	50
Esk	..	..	..	..	16,045	..	..	1	20	807	60	888	61	250	525	5,397	..	..	784	..	3,616
Gatton	290	40	..	..	30,344	..	..	540	575	4,780	368	6,263	2,126	517	5,485	63,665	..	1	..	..	3,400
Harrisville	..	..	..	..	25,206	..	..	245	377	4,963	1,453	7,038	217	161	1,793	6,552	..	1	..	..	206
Ipswich	..	4	..	..	5,614	..	..	7	55	921	292	1,275	149	59	224	4,858	..	..	300	..	..
Kilcoy	..	..	..	..	15,093	..	..	..	9	376	7	392	99	292	780	..	..	179	..	..	200
Laidley	40	..	..	..	35,755	..	..	272	257	7,476	324	8,329	1,276	629	2,553	22,427	..	..	500	..	2,700
Logan	..	..	..	..	9,718	..	..	8	24	482	53	567	797	514	224	..	13,471	1,398	20,875	..	3,407
Lowood	6	..	..	..	25,688	..	..	52	447	1,735	243	2,477	1,409	393	2,111	17,653	..	10	1,000	..	186,530
Marburg	..	..	..	..	15,134	..	..	..	3	522	167	692	118	189	378	7,124	..	47	2,560	..	..
Maroochy	..	..	..	..	11,724	..	..	..	9	74	..	83	112	175	119	..	65,751	242	113,750	..	480
Redcliffe	..	..	..	..	5,662	..	..	6	5	221	63	295	124	333	620	..	77	..	100	..	100
Rosewood	291	32	..	..	26,445	..	..	2	167	3,174	964	4,307	243	69	1,148	10,643	..	124	100	..	..
Southport	..	..	..	..	18,486	..	..	..	17	74	1	92	437	181	181	..	499	4,400	840	..	1,500
Toogoolawah	..	..	..	..	62,447	..	..	20	34	2,955	80	3,089	326	423	3,656	3,244	..	..	..	..	14,990
Woodford	..	..	..	..	14,101	..	..	..	..	25	..	25	65	175	256	..	..	102	..	..	..
Wynnum	..	..	..	..	18	..	..	..	2	..	17	19	14	32	29	..	..	..	2,870	..	13,730
Oakey–Cooyar	4,183	813	375	1,029	6,685	..	..	2	93	346	14	455	131	..	788	..	..	..	..	..	..
Toowoomba–Helidon	9	..	..	..	12,044	..	..	15	85	1,249	277	1,626	565	416	1,443	13,393	..	..	2,900	..	20,400
Total Moreton	14,287	2,712	2,274	3,274	517,076	15	..	1,447	2,572	47,167	6,241	57,427	11,157	5,430	32,224	166,945	79,798	6,669	192,052	3,100	735,466
Wide Bay Division.																					
Biggenden	..	..	..	..	12,348	..	..	..	30	271	256	557	42	67	817	54,425	204	6	6,112	..	600
Bundaberg	..	..	..	..	11,839	..	..	..	12	379	2	393	99	116	126	8,904	391,258	37	2,380	8,000	1,682
Childers	..	..	..	..	851	..	..	..	9	4	3	16	5	1	1	11,805	80,205	..	..	..	600
Eidsvold	..	..	..	..	2,773	..	..	..	19	42	45	106	43	103	317	104,461	..	..	..	..	805
Gayndah	390	..	..	..	20,039	..	..	5	15	277	299	596	43	120	1,870	371,814	..	..	3,183	481	1,081
Gin Gin	..	..	..	..	5,761	..	..	..	10	120	18	148	29	29	61	22,564	32,165	..	760	..	2,510
Gympie	..	13	..	..	59,492	..	..	..	91	1,395	113	1,599	452	2,035	1,255	489	1,271	528	600	..	6,980
Kilkivan	..	..	..	..	3,577	..	..	..	4	357	30	391	26	64	257	4,730	..	..	50	..	..
Maryborough	..	..	..	..	3,253	..	..	54	49	736	115	954	172	41	66	10,633	50,248	21	14,750	..	11,084
Mount Perry	..	..	..	..	452	..	..	..	11	30	..	41	1	11	1	11,337	..	..	3,640	..	..
Nanango	6,199	7,455	135	90	118,488	..	..	27	291	2,508	129	2,955	317	368	2,790	225,528	..	5	4,125,535	..	3,710
Tiaro	..	..	..	..	7,885	..	..	6	54	551	31	642	155	107	178	432	12,030	21	1,000	..	12,916
Wienholt	2,248	4,880	..	870	347,621	..	..	15	229	6,029	307	6,580	1,234	775	8,548	550,321	..	89	4,871,484	..	2,090
Total Wide Bay	8,837	12,348	135	960	594,679	..	..	107	824	12,699	1,348	14,978	2,618	3,837	16,287	1,377,443	567,381	707	9,029,494	8,481	44,058
Downs Division.																					
Allora	480,148	3,868	6,758	7,553	85,462	..	..	107	62	1,455	167	1,791	16	..	220	..	..	..	300	..	25
Chinchilla	10,562	120	..	..	3,666	..	..	32	31	59	73	195	1	..	143	3,055	..	..	50	..	32,640
Clifton	434,527	5,814	38,349	5,546	77,712	..	..	777	54	1,086	481	2,398	11	..	325	2,895	..	..	..	..	1,872
Condamine	6,610	..	..	..	1,510	..	..	35	..	..	12	47	1	..	6	55,053	..	..	..	..	2,592
Dalby	748,643	6,601	3,453	2,341	12,683	..	..	874	..	231	207	1,312	14	..	430	34,490	..	..	..	..	14,634
Goondiwindi	60	..	..	..	48	..	..	22	..	87	80	189	..	..	..	..	..	..	..	..	2,825
Inglewood	5,209	1,913	30	30	670	..	..	72	22	327	30	451	..	1	47	694	..	..	..	264,587	1,060
Killarney	109,122	5,643	364	1,695	99,846	..	..	74	45	1,934	59	2,112	64	..	14	..	..	..	..	..	2,370
Oakey	602,073	12,329	5,629	4,157	21,231	..	..	447	261	1,093	419	2,220	79	1	745	490	..	..	..	..	5,650
Pittsworth	643,854	6,076	7,929	2,698	11,087	..	..	504	41	848	739	2,132	4	..	105	7,342	..	..	..	..	986
Stanthorpe	..	..	..	..	2,207	..	..	13	100	216	4	333	402	..	139	..	..	..	..	2,550	3,922,481
Texas	1,320	..	..	720	2,060	..	..	..	3	346	15	364	..	..	54	12,379	..	..	..	267,343	110
Toowoomba	165,471	7,177	14,706	2,883	19,134	9	..	415	402	961	403	2,181	163	2	221	..	..	..	5,775	..	19,909
Warwick	381,731	14,722	4,571	4,509	89,679	..	..	365	348	4,057	603	5,373	120	1	281	..	..	..	..	..	54,570
Total Downs	3,589,330	64,263	81,789	32,132	426,995	9	..	3,737	1,369	12,700	3,292	21,098	875	5	2,730	116,398	..	..	6,125	534,480	4,061,724

Table No. 31—*continued.*

GRAIN AND OTHER CROPS—PRODUCTION, 1937. (For Areas see Table No. 28.)

Division.	Grain Crops.							Hay (All Kinds).					Potatoes.		Pumpkins.	Cotton (Seed Cotton).	Sugarcane (Crushed).	Arrowroot (Tubers).	Peanuts.	Tobacco (Cured Leaf).	Grapes.
	Wheat.	Oats.	Barley.		Maize.	Rye.	Rice.	Wheat.	Oats.	Lucerne.	Other.	Total.	English.	Sweet.							
			Malting.	Other.																	
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Lb.	Tons.	Tons.	Lb.	Lb.	Lb.
Maranoa Division.																					
Bollon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	300
Dirranbandi	..	..	..	..	..	..	..	..	..	..	..	..	3	3	2	..	..	..	..	..	2,940
Mitchell	444	..	..	..	50	..	..	30	..	..	2	32	..	..	2	..	..	..	..	..	190
Roma	118,169	..	..	..	763	..	..	343	..	..	57	400	1	2	23	5,334	..	..	..	..	305,141
St. George	..	..	..	..	..	..	..	19	..	..	..	19	..	..	1	..	..	..	..	..	1,500
Surat	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	420
Yeulba	..	..	..	..	18	..	..	..	..	1	..	1	1	..	..	..	..	..	..	..	7,410
Total Maranoa	118,613	..	..	..	831	..	..	392	..	1	59	452	5	5	28	5,334	..	..	..	..	317,901
South-Western Division.																					
Adavale	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Augathella	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	562
Charleville	..	..	..	..	..	..	..	..	..	1	2	3	3	..	3	..	..	..	..	..	3,805
Cunnamulla	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,010
Eulo	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hungerford	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Quilpie	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Thargomindah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	180
Total South-Western	..	..	..	..	..	..	..	..	..	1	2	3	3	..	3	..	..	..	..	..	6,557
Total South Queensland	*3,731,067*	*79,323*	*84,198*	*36,366*	*1,539,581*	*24*	..	*5,683*	*4,765*	*72,568*	*10,942*	*93,958*	*14,658*	*9,277*	*51,273*	*1,666,120*	*647,179*	*7,376*	*9,227,671*	*546,061*	*5,165,705*
Port Curtis Division.																					
Banana	9,990	..	..	..	1,383	..	..	30	10	23	10	73	1	..	34	227,281	..	..	..	..	2,625
Gladstone	5	..	..	..	20,716	..	..	..	2	378	319	699	441	22	539	54,298	..	8	20,875	69,100	1,310
Monto	1,188	..	..	30	40,427	..	..	..	..	1,859	88	1,947	97	16	2,553	552,616	..	..	3,000	..	6,480
Mount Morgan	7,155	..	..	27	18,126	..	..	47	..	48	63	158	96	11	633	8,898,190	..	..	35,433	..	650
Rockhampton	38	..	..	..	18,341	..	..	7	29	554	393	983	219	95	321	334,337	..	..	728,874	..	68,295
St. Lawrence	..	..	..	..	450	..	..	..	..	15	..	15	4	..	9	1,335	1,907	..	..	..	..
Taroom	..	..	..	..	165	..	..	..	..	..	..	..	..	..	13	..	..	..	..	..	200
Total Port Curtis	18,376	..	..	57	99,608	..	..	84	41	2,877	873	3,875	858	144	4,102	10,068,057	1,907	8	788,182	69,100	79,560
Central-Western Division.																					
Alpha	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Aramac	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	210
Barcaldine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..
Blackall	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,010
Clermont	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6,755	..	..	..	..	..
Emerald	..	..	..	..	24	..	..	..	..	..	..	..	..	..	5	3,256	..	..	..	..	734
Longreach	..	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..	..	..	..	..	1,800
Muttaburra	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Springsure	..	..	..	..	20	..	..	..	..	2	..	2	..	..	2	2,579	..	..	..	..	1,029
Tambo	..	..	..	..	..	..	..	..	..	..	..	..	6	1	2	..	..	..	..	..	672
Total Central-Western	..	..	..	..	44	..	..	..	..	2	..	2	12	1	10	12,590	..	..	..	..	5,455
Far Western Division.																					
Boulia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	460
Diamantina	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Isisford	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	240
Jundah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	70
Windorah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Winton	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	480
Total Far Western	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,250
Total Central Queensland	*18,376*	..	..	*57*	*99,652*	..	..	*84*	*41*	*2,879*	*873*	*3,877*	*870*	*145*	*4,112*	*10,080,647*	*1,907*	*8*	*788,182*	*69,100*	*86,265*

Edgecumbe Division.																					
Ayr	..	..	..	..	514	..	..	..	..	..	..	..	55	2	29	1,391	773,536	..	300	685	20
Bowen	..	..	..	..	619	..	..	..	..	..	..	..	94	8	460	22,923	3,521	..	650	61,425	450
Cape River	..	..	..	..	54	..	..	..	..	..	..	..	4	3	14	..	..	..	260	..	6,847
Charters Towers	..	..	..	..	..	..	..	..	..	..	..	..	2	1	9	..	..	..	..	..	50,670
Collinsville	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	7,791	..
Mackay	..	..	..	..	1,727	..	..	..	..	..	5	5	67	10	35	3,165	957,279	..	..	135,690	2,187
Proserpine	..	..	..	..	15	..	..	..	..	..	..	..	6	..	4	..	138,006	..	..	..	..
Ravenswood	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,464	..
Townsville	..	..	..	..	52	..	..	..	..	..	10	10	226	6	59	..	4,408	..	2,240	21,090	..
Total Edgecumbe ..	..	..	..	..	2,981	..	..	..	..	..	15	15	455	30	611	27,479	1,906,750	..	3,450	229,145	60,174
Rockingham Division.																					
Atherton	..	..	400	..	960,637	..	..	14	4	302	31	351	88	495	19	..	..	30	628,928	2,600	300
Cairns	..	..	..	..	15	..	..	..	..	..	..	..	5	50	1	..	842,742	..	..	..	..
Cardwell	..	..	..	..	40	..	..	..	..	..	..	..	3	1	7	3,252	238,795	..	..	..	..
Chillagoe	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..
Douglas	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	147,829	..	..	..	..
Herberton	..	..	..	..	15,685	..	..	..	4	1	..	5	34	7	12	..	..	..	800	8,376	10,400
Ingham	..	..	..	..	4,685	..	..	..	..	..	3	3	287	16	2	..	618,108	80	..	7,000	..
Innisfail	..	..	..	..	294	..	..	..	..	..	..	..	15	1	3	179	729,576	..	..	..	..
Mareeba	..	..	..	..	3,389	..	..	3	..	..	5	8	136	17	41	15,151	..	..	559,607	1,454,784	..
Total Rockingham ..	..	..	400	..	984,745	..	..	17	8	303	39	367	568	588	86	18,582	2,577,050	110	1,189,335	1,472,760	10,700
Peninsula Division.																					
Coen	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cook	..	..	..	..	1,439	..	..	..	..	..	..	..	1	5	3	..	..	..	91,456	..	..
Somerset	..	..	..	..	30	..	..	..	..	..	..	..	2	1	1	..	..	..	..	..	..
Total Peninsula ..	..	..	..	..	1,469	..	..	..	..	..	..	..	3	6	4	..	..	..	91,456	..	..
North-Western Division.																					
Burke..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..
Camooweal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cloncurry	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Croydon	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Etheridge	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	40
Hughenden	..	..	..	..	..	..	..	..	..	1	..	1	10	..	3	..	..	..	200	..	..
Julia Creek	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mount Isa	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Norman	..	..	..	..	30	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Richmond	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total North-Western ..	..	..	..	..	30	..	..	..	..	1	..	1	11	1	4	..	..	..	200	..	40
Total North Queensland ..	..	..	*400*	..	*989,225*	..	..	*17*	*8*	*304*	*54*	*383*	*1,037*	*625*	*705*	*46,061*	*4,483,800*	*110*	*1,284,441*	*1,701,905*	*70,914*
Grand Total, State—																					
1937	3,749,443	79,323	84,598	36,423	2,628,458	24	..	5,784	4,814	75,751	11,869	98,218	[illegible]	10,047	56,089	11,792,828	5,132,886	7,494	11,300,294	2,317,066	5,322,885
1936	2,016,236	22,417	27,302	10,076	3,148,814	41	..	4,190	2,266	59,405	7,926	73,787	[illegible]	11,959	40,038	19,198,600	5,170,571	10,204	17,023,099	2,005,031	4,997,851
Increase, 1937	1,733,207	56,906	57,296	26,347	..	..	..	1,594	2,548	16,290	3,943	24,431	[illegible]	..	16,051	..	..	..	..	312,035	325,034
Decrease, 1937 ..	..	..	..	..	520,356	17	..	..	..	..	..	..	..	1,912	..	7,405,772	37,685	2,710	5,722,805	..	..

Table No. 32.

FRUIT CROPS—PRODUCTION, 1937. (For Areas see Table No. 29.)

Division.	Apples.	Apricots.	Bananas.	Cherries.	Custard Apples.	Figs.	Goose-berries (Cape).	Lemons.	Mangoes.	Nectarines.	Oranges and Mandarins.	Passion Fruit.	Papaws.	Peaches.	Pears.	Persimmons.	Pine-apples.	Plums.	Quinces.	Straw-berries.	Water-melons and Rock-Melons.
	Bushels.	Bushels.	Bunches.	Bushels.	Bushels.	Bushels.	Quarts.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Dozens.	Bushels.	Bushels.	Bushels.	Dozens.	Bushels.	Bushels.	Quarts.	Dozens.
Moreton Division.																					
Brisbane (North)	3	4	38,549	..	255	30	..	25	1,184	..	107	1,030	57,707	3,994	..	6	56,402	72	..	8,620	6,065
Brisbane (South)	..	..	40	..	1,930	2,984	300	14	264	..	224	23	26,554	14	..	..	22,141	..	..	2,360	353
Beaudesert	4	8	950	..	..	..	..	36	22	..	91	3	8	51	12	..	..	15	..	..	338
Caboolture	..	..	49,418	..	170	..	400	441	330	..	4,159	280	358	11	..	..	156,830	..	..	4,690	135
Cleveland	..	..	15,047	..	10,935	28	..	1,385	925	..	370	3,437	11,175	15	..	38	48,685	..	..	144,281	1,021
Crow's Nest	27	94	..	..	..	..	..	1,746	..	..	805	..	..	76	27	..	..	60	..	..	30
Dugandan	..	..	..	..	1	..	320	99	11	..	270	154	60	135	..	..	20	5	..	..	119
Esk	..	..	1,220	..	..	..	..	493	12	..	856	401	..	30	2	..	..	..	..	..	14
Gatton	..	2	..	..	2	..	..	20	..	..	6,676	..	..	10	..	..	2	..	..	..	754
Harrisville	..	13	..	..	..	6	..	42	..	..	359	..	..	68	4	..	..	..	..	..	24
Ipswich	..	..	..	..	..	..	..	..	112	..	270	..	..	..	..	..	7,100	..	..	..	196
Kilcoy	..	..	2,000	..	..	..	..	13	1	..	108	..	20	..	..	..	..	..	..	..	20
Laidley	..	6	190	..	..	..	..	28	11	..	52	..	35	57	4	..	134	6	..	..	..
Logan	..	..	134,760	..	12,269	..	..	407	3,110	..	1,373	5,685	738	47	4	..	7,143	..	..	..	207
Lowood	..	..	..	..	..	..	..	16	..	..	131	..	..	14	..	..	3,370	..	..	..	1,420
Marburg	..	..	..	..	..	..	4,275	20	23	..	38	..	..	50	..	..	1,243	..	..	..	..
Maroochy	..	..	296,046	..	570	..	80	407	950	..	61,501	2,715	12,430	44	12	55	671,752	6	..	126,913	352
Redcliffe	..	..	41,916	..	2	9	..	438	387	..	557	391	21	16	..	..	29,784	4	..	190	2,655
Rosewood	..	..	..	..	..	..	..	5	..	..	3	..	..	26	..	..	..	..	..	..	6
Southport	4	..	595,340	..	150	1	..	39	185	10	2,986	2,565	530	30	..	1	1,860	29	..	500	43
Toogoolawah	..	7	..	..	..	..	..	40	..	..	253	..	..	25	..	..	..	..	..	..	347
Woodford	..	5	71,986	..	..	..	..	49	53	..	449	20	18	24	1	..	2,240	9	..	..	30
Wynnum	..	..	7,572	..	40	..	..	4	1	..	..	60	2,926	..	..	..	8,944	..	..	7,387	677
Oakey–Cooyar	3	22	..	..	..	6	..	3	..	..	6	..	..	4	2	..	..	5	..	..	6
Toowoomba–Helidon	..	17	..	..	..	5	..	48	20	..	1,729	..	..	36	..	..	..	6	..	..	551
Total Moreton	41	178	1,255,034	..	26,324	3,069	5,375	5,818	7,601	10	83,373	16,764	112,580	4,777	68	100	1,017,650	217	..	294,941	15,363
Wide Bay Division.																					
Biggenden	..	..	1,674	..	3	..	..	3	45	..	157	7	40	10	..	..	76	4	..	..	117
Bundaberg	7	..	10,213	..	521	..	..	185	2,322	..	5,249	51	96	79	2	..	6,590	7	..	3,562	882
Childers	1	..	50	..	17	..	..	22	1,057	..	7,201	..	7	21	..	..	2,660	6	..	..	8
Eidsvold	1	1	..	..	..	2	..	17	..	..	255	..	..	14	1	..	3	2	..	..	12,504
Gayndah	..	8	1,260	..	2	..	..	13,691	42	..	29,952	500	65	32	1	1	792	2	..	..	108
Gin Gin	2	..	270	..	19	..	..	78	313	..	1,088	..	..	67	5	4	207	7	..	20	98
Gympie	31	1	107,325	..	342	5	..	232	1,859	..	3,553	248	5,537	163	72	4	156,872	17	..	2,400	586
Kilkivan	1	2	..	..	..	..	..	38	19	..	24	..	..	17	..	..	..	..	..	..	4
Maryborough	..	..	3,068	..	221	..	..	152	2,382	..	58,161	289	2,590	8	3	..	34,147	28	..	..	872
Mount Perry	..	..	220	..	16	..	..	40	33	..	350	..	..	..	..	..	..	..	..	..	7
Nanango	9	172	..	..	4	..	..	152	20	..	214	102	..	144	26	1	545	78	..	..	75
Tiaro	11	..	1,800	..	59	..	..	60	521	..	695	7	4,092	27	3	5	5,233	3	..	..	88
Wienholt	43	63	..	..	4	..	..	85	6	..	308	2	..	167	12	..	363	2	..	..	25
Total Wide Bay	106	247	125,880	..	1,208	7	..	14,755	8,619	..	107,207	1,206	12,427	749	125	15	207,488	156	..	5,982	15,374
Downs Division.																					
Allora	3	100	..	..	..	..	..	29	..	..	1,406	..	..	72	16	..	..	4	..	..	35
Chinchilla	10	20	..	..	..	..	..	15	..	..	20	..	..	89	6	..	..	18	..	..	302
Clifton	10	192	..	..	..	..	..	20	..	..	62	..	..	93	28	..	..	73	..	..	3
Condamine	..	23	..	..	..	3	..	14	..	..	150	..	..	121	1	..	..	20	..	..	1
Dalby	2	47	..	..	..	5	..	48	..	20	349	..	5	84	7	..	..	15	..	..	92
Goondiwindi	..	..	..	..	..	9	..	15	..	..	270	..	..	34	..	..	..	..	..	..	2
Inglewood	10	99	..	..	..	..	..	50	..	..	36	..	..	112	..	..	..	8	..	..	122
Killarney	8	51	..	..	..	..	..	14	..	..	19	2	..	21	8	..	..	11	..	..	17
Oakey	9	137	..	..	..	1	..	36	..	..	219	..	..	86	4	..	..	47	..	..	50
Pittsworth	2	12	..	..	..	..	..	4	..	..	18	..	..	18	8	..	..	6	..	..	3
Stanthorpe	261,364	9,300	..	255	..	..	..	314	..	3,545	3	73	..	82,106	25,071	..	..	72,961	914	..	880
Texas	..	7	..	..	..	..	..	3	..	..	22	..	..	10	..	..	..	3	..	..	50
Toowoomba	67	730	..	..	..	24	..	192	..	..	545	12	4	220	104	2	..	289	..	..	3
Warwick	7,750	2,648	..	..	..	..	..	33	..	25	119	..	..	690	688	..	..	1,696	23	..	88
Total Downs	269,235	13,366	..	255	..	42	..	787	..	3,590	3,238	87	9	83,756	25,941	2	..	75,151	937	..	1,648

Maranoa Division.																					
Bollon	..	..	..	..	..	..	..	43	..	..	86	..	..	17	..	..	..	..	..	..	..
Dirranbandi	..	..	..	..	..	..	..	..	..	..	60	..	..	40	10	..	..	12	..	..	..
Mitchell	..	..	..	..	..	..	..	..	..	..	..	..	..	18	2	..	..	..	..	..	8
Roma	..	78	..	..	..	30	..	38	..	..	2,949	..	..	118	2	..	..	7	..	..	52
St. George	..	11	..	..	..	2	..	11	..	..	22	..	..	4	..	..	..	..	..	..	60
Surat	..	9	..	..	..	..	..	7	..	..	34	..	..	9	..	..	..	4	..	..	..
Yeulba	..	..	..	..	..	..	..	..	..	..	71	..	..	6	..	..	..	..	..	..	..
Total Maranoa	..	98	..	..	..	32	..	99	..	..	3,222	..	..	212	14	..	..	23	..	..	120
South-Western Division.																					
Adavale	..	..	..	..	..	..	..	2	..	..	39	..	..	..	..	..	..	..	..	..	..
Augathella	..	2	..	..	..	..	..	2	..	..	24	..	..	..	..	..	..	..	..	..	..
Charleville	..	4	..	..	..	..	..	93	..	..	1,013	..	..	15	..	..	..	..	..	..	102
Cunnamulla	..	..	..	..	..	..	..	14	..	..	611	..	..	18	..	..	..	..	..	..	..
Eulo	..	..	..	..	..	..	..	1	..	..	5	..	..	..	..	..	..	..	..	..	..
Hungerford	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Quilpie	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Thargomindah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total South-Western	..	6	..	..	..	..	..	112	..	..	1,692	..	..	33	..	..	..	..	..	.	102
Total South Queensland	*269,382*	*13,895*	*1,380,914*	*255*	*27,532*	*3,150*	*5,375*	*21,571*	*16,220*	*3,600*	*198,732*	*18,057*	*125,016*	*89,[illegible]27*	*26,148*	*117*	*1,225,138*	*75,547*	*937*	*300,923*	*32,607*
Port Curtis Division.																					
Banana	..	..	..	..	..	..	..	6	..	..	126	..	..	12	..	..	..	16	..	..	70
Gladstone	..	..	16,339	..	100	..	..	226	835	..	3,085	99	44,291	38	..	6	4,084	4	..	..	687
Monto	..	2	..	..	..	..	..	32	..	..	245	..	..	35	..	..	..	3	..	..	195
Mount Morgan	..	..	..	..	32	..	..	90	261	..	1,808	..	39	47	..	..	239	..	..	..	98
Rockhampton	..	..	65,013	..	489	..	..	435	3,185	..	22,279	367	2,010	78	..	..	34,621	..	..	8,858	858
St. Lawrence	..	..	1,829	..	11	..	..	10	190	..	322	100	..	4	..	..	3,851	..	..	..	..
Taroom	..	..	..	..	..	4	..	3	..	..	32	..	..	8	1	..	..	2	..	..	..
Total Port Curtis	..	2	83,181	..	632	4	..	802	4,471	..	27,897	566	46,340	222	1	6	42,795	25	..	8,858	1,908
Central-Western Division.																					
Alpha	..	..	..	..	..	..	..	3	..	..	127	..	..	2	..	..	..	..	..	..	..
Aramac	..	..	..	..	..	..	..	3	12	..	4	..	..	..	..	..	..	..	..	..	23
Barcaldine	..	..	..	..	..	..	..	2	..	..	50	..	8	..	..	..	..	..	..	..	6
Blackall	..	..	..	..	..	..	..	17	20	..	247	..	..	20	..	..	..	..	..	..	50
Clermont	..	..	..	..	..	..	..	3	..	..	7	..	..	5	..	..	..	..	..	..	60
Emerald	..	..	6	..	1	..	..	76	..	..	8,841	..	30	..	..	..	..	..	..	..	8
Longreach	..	..	..	..	..	..	..	30	12	..	40	..	..	10	..	..	..	..	..	..	170
Muttaburra	..	..	..	..	..	..	..	26	..	..	60	..	..	..	..	..	..	..	..	..	..
Springsure	..	..	..	..	..	..	..	25	1	..	185	..	1	36	..	..	..	..	..	..	11
Tambo	..	..	..	..	..	..	..	3	..	..	6	..	..	..	..	..	..	..	..	..	17
Total Central-Western	..	..	6	..	1	..	..	188	45	..	9,567	..	39	73	..	..	..	..	..	..	345
Far Western Division.																					
Boulia	..	..	..	..	..	..	..	55	..	..	50	..	..	..	..	..	..	..	..	..	20
Diamantina	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Isisford	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	35
Jundah	..	..	..	..	..	..	..	32	..	..	56	..	..	..	..	..	..	..	..	..	..
Windorah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Winton	..	..	..	..	..	..	..	..	9	..	6	..	..	..	..	..	..	..	..	..	20
Total Far Western	..	..	..	..	..	..	..	90	9	..	112	..	..	..	..	..	..	..	..	..	75
Total Central Queensland	..	*2*	*83,187*	..	*633*	*4*	..	*1,080*	*4,525*	..	*37,576*	*566*	*46,379*	*295*	*1*	*6*	*42,795*	*25*	..	*8,858*	*2,328*

Table No. 32—*continued.*

FRUIT CROPS—PRODUCTION, 1937. (For Areas see Table No. 29.)

Division.	Apples.	Apricots.	Bananas.	Cherries.	Custard Apples.	Figs.	Goose-berries (Cape).	Lemons.	Mangoes.	Nec-tarines.	Oranges and Man-darins.	Passion Fruit.	Pawpaws.	Peaches.	Pears.	Per-simmons	Pine-apples.	Plums.	Quinces.	Straw-berries.	Water-melons and Rock-Melons.
	Bushels.	Bushels.	Bunches.	Bushels.	Bushels.	Bushels.	Quarts.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Dozens.	Bushels.	Bushels.	Bushels.	Dozens.	Bushels.	Bushels.	Quarts.	Dozens.
Edgecumbe Division.																					
Ayr	..	..	7,262	..	10	..	..	106	1,817	..	417	..	96	..	..	..	548	..	..	..	32
Bowen	..	..	1,917	..	126	..	..	131	14,602	..	909	..	5	..	..	..	27,005	..	..	..	1,339
Cape River	..	..	..	..	..	..	..	194	..	..	1,754	..	..	20	..	..	..	..	..	..	283
Collinsville	..	..	..	..	19	..	..	136	949	..	3,625	..	..	..	..	..	..	..	..	..	168
Charters Towers	..	..	..	..	8	..	..	39	3	..	74	..	..	..	..	..	..	..	..	..	40
Mackay	..	..	11,387	..	760	..	..	1,848	13,352	..	9,045	3	1,942	39	5	..	5,726	..	..	104	182
Proserpine	..	..	..	..	177	..	..	370	2,250	..	1,268	..	4	11	..	3	27	..	..	..	36
Ravenswood	..	..	..	..	..	..	..	11	..	..	514	..	..	..	..	..	..	..	..	..	..
Townsville	..	..	4,714	..	36	..	..	1,151	3,054	..	1,725	5	2,217	2	..	..	16,234	..	..	230	356
Total Edgecumbe	..	..	25,280	..	1,136	..	..	3,986	36,027	..	19,331	8	4,264	72	5	3	49,540	..	..	334	2,436
Rockingham Division.																					
Atherton	7	..	1,304	..	141	..	..	267	130	..	1,745	..	144	14	..	..	228	5	..	720	..
Cairns	..	..	13,447	..	98	..	..	672	4,930	..	7,007	..	[illegible]	5	..	..	5,127	..	..	..	93
Cardwell	..	..	9,942	..	9	..	..	412	96	..	17,141	..		..	..	..	901	..	..	..	198
Chillagoe	..	..	..	..	65	..	..	10	108	..	16	..		..	..	..	..	..	..	..	..
Douglas	..	..	55	..	38	..	..	99	1,688	..	919	..		..	..	..	6	..	..	..	12
Herberton	21	15	..	..	3	..	..	302	42	..	963	..	..	65	21	..	..	440	4	..	110
Ingham	..	..	1,335	..	119	..	..	1,455	5,891	..	4,901	1	150	126	4	..	6,894	..	..	..	94
Innisfail	..	..	326	..	5	..	..	286	39	..	1,087	24	93	..	..	..	57	..	..	..	57
Mareeba	..	..	671	..	52	10	..	151	1,556	..	798	108	182	9	..	..	289	..	..	..	583
Total Rockingham	28	15	27,080	..	530	10	..	3,654	14,480	..	34,577	133	1,701	219	25	..	13,502	445	4	720	1,147
Peninsula Division.																					
Coen	..	..	..	..	3	..	..	..	48	..	10	..	..	..	..	..	..	..	..	..	..
Cook	..	..	330	..	6	..	..	2	500	..	1,900	..	22	..	..	..	6	..	..	..	18
Somerset	..	..	412	..	..	..	..	..	75	..	9	..	125	..	..	..	66	..	..	..	..
Total Peninsula	..	..	742	..	9	..	..	2	623	..	1,919	..	147	..	..	..	72	..	..	..	18
North-Western Division.																					
Burke	..	..	98	..	..	..	..	..	10	..	4	..	54	..	..	..	..	..	..	..	6
Camooweal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cloncurry	..	..	..	..	..	..	..	125	8	..	275	..	..	..	..	..	..	..	..	..	..
Croydon	..	..	40	..	20	..	..	2	..	..	1	..	..	..	..	..	10	..	..	..	..
Etheridge	..	..	..	..	..	..	..	9	12	..	17	..	12	..	..	..	..	..	..	..	..
Hughenden	..	..	10	..	..	..	..	33	47	..	634	..	..	..	..	..	..	..	..	..	170
Julia Creek	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mount Isa	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Norman	..	..	100	..	..	..	..	..	140	..	43	..	..	..	..	..	34	..	..	..	3
Richmond	..	..	..	..	..	..	..	4	..	..	4	..	..	..	..	..	..	..	..	..	..
Total North-Western	..	..	248	..	20	..	..	173	217	..	978	..	66	..	..	..	44	..	..	..	179
Total North Queensland	*28*	*15*	*53,350*	..	*1,695*	*10*	..	*7,815*	*51,347*	..	*56,805*	*141*	*6,178*	*291*	*30*	*3*	*63,158*	*445*	*4*	*1,054*	*3,780*
Grand Total, State—																					
1937	269,410	13,912	1,517,451	255	29,860	3,164	5,375	30,466	72,092	3,600	293,113	18,764	177,573	90,113	26,179	126	1,331,091	76,017	941	310,835	38,715
1936	215,279	7,343	1,447,244	116	24,931	5,703	7,212	24,151	51,152	2,052	307,439	11,425	158,067	76,662	21,491	334	1,227,734	64,633	770	246,973	33,122
Increase, 1937	54,131	6,569	70,207	139	4,929	..	..	6,315	20,940	1,548	..	7,339	19,506	13,451	4,688	..	103,357	11,384	171	63,862	5,593
Decrease, 1937	..	..	..	..	..	2,539	1,837	..	..	..	14,326	..	..	..	..	208	..	..	..	..	..

Division.	Vegetables.									Miscellaneous Crops.											
	Beans.		Cabbages and Cauliflowers.	Cucumbers.	Onions.	Peas.		Tomatoes.	Turnips.	Canary Seed.	Coffee.	Copra.	Cow Peas.	Grass Seed.	Linseed.	Lucerne Seed.	Mangel Wurzel.	Millet (Broom).	Millet (Seed).	Panicum Seed.	Sunflower Seed.
	Green.	Dried.				Green.	Dried.														
Moreton Division.	Bags.	Bushels.	Dozen.	Dozen.	Cwt.	Bags.	Bushels.	Bushels.	Tons.	Cwt.	lb.	Tons.	Bushels.	Cwt.	lb.	Cwt.	Tons.	lb. Straw.	Cwt.	Cwt.	Cwt.
Brisbane (North)	9,086	920	25,152	17,301	59	7,772	301	33,835	12	..	..	..	..	..	..	..	14	300	..	..	..
Brisbane (South)	2,438	440	23,526	6,717	20	1,060	110	11,967	14	..	..	..	..	..	..	..	..	..	..	..	..
Beaudesert	200	..	1,919	..	..	30	..	266	20	..	..	..	..	..	..	..	970	..	..	..	..
Caboolture	85	..	6	1,795	..	138	10	513	2	..	..	..	..	..	..	..	9	..	..	..	..
Cleveland	17,610	1,423	97,621	57,674	..	1,272	66	111,329	4	..	..	..	..	..	..	..	1	..	..	..	..
Crow's Nest	..	..	..	..	..	19	..	..	14	..	..	..	27	..	..	..	65	..	..	..	..
Dugandan	2,052	62	7,697	6,327	40	1,096	5	3,903	27	..	..	..	12	3	..	..	813	7,360	..	158	..
Esk	16	..	..	..	..	27	..	..	1	..	..	..	..	1	..	..	67	..	..	..	..
Gatton	65	..	9,249	1,415	33,073	31	..	528	68	..	..	..	..	3	..	..	145	..	..	..	..
Harrisville	266	35	..	290	420	207	..	888	11	..	..	..	..	..	..	..	341	112	..	..	..
Ipswich	305	373	6,025	250	20	232	192	510	2	..	..	..	..	..	..	..	31	694	..	..	..
Kilcoy	110	..	..	..	..	..	..	120	14	..	..	..	..	..	..	..	304	..	..	..	..
Laidley	145	52	500	..	21,846	280	..	421	19	..	..	..	6	..	..	..	474	46,871	..	..	5
Logan	6,840	510	43,365	7,001	10	8,180	129	27,588	14	..	..	..	..	..	..	..	8	1,400	..	..	..
Lowood	195	..	..	..	23,115	141	..	30	69	..	..	..	..	216	..	..	592	..	..	..	..
Marburg	650	..	20	140	..	1,004	..	2,536	..	..	..	..	..	..	..	..	377	..	..	..	..
Maroochy	16,806	6,459	258	8,536	..	1,397	29	2,685	15	30	5,332	..	..	..	..	..	56	..	..	..	..
Redcliffe	709	..	10,355	4,496	..	963	30	4,981	1	..	..	..	20	..	..	..	..	..	..	..	..
Rosewood	131	62	..	10	291	343	..	253	..	..	..	..	..	38	..	..	171	..	..	..	..
Southport	1,699	560	5,271	410	..	749	..	836	6	..	..	..	50	9	..	..	33	..	..	..	..
Toogoolawah	40	3	50	..	145	15	..	31	6	..	..	..	..	..	..	..	945	..	..	..	..
Woodford	40	30	150	300	..	..	..	..	43	..	..	..	..	..	..	..	94	..	..	..	..
Wynnum	746	221	1,372	1,990	..	576	300	12,691	3	..	..	..	..	..	..	..	..	..	..	..	..
Oakey–Cooyar	..	..	20	..	..	..	..	..	..	..	..	..	..	..	..	..	66	..	..	..	..
Toowoomba–Helidon	150	..	920	470	710	180	..	1,507	25	..	..	..	..	..	..	..	102	..	..	..	..
Total Moreton	60,384	11,150	233,476	115,122	79,749	25,712	1,172	217,418	390	30	5,332	..	115	270	..	..	5,678	56,737	..	158	5
Wide Bay Division.																					
Biggenden	10	..	382	260	..	40	..	110	12	..	..	..	3	25	..	..	76	..	..	..	..
Bundaberg	86	..	2,308	282	..	167	1	647	1	..	..	..	..	..	..	..	21	..	..	..	..
Childers	17	15	219	179	..	80	..	9	1	..	..	..	..	..	..	..	..	..	..	..	..
Eidsvold	..	..	..	..	..	..	..	..	..	..	..	..	45	..	..	..	12	1,120	..	..	..
Gayndah	1	..	187	173	1	12	120	382	1	..	..	..	2,872	..	..	..	532	17,694	..	10	..
Gin Gin	7	1	111	110	..	106	..	76	1	..	..	..	..	..	..	..	..	9,300	..	..	..
Gympie	53,688	5,852	3,232	11,146	..	1,845	251	2,367	64	..	1,745	..	..	..	..	..	221	..	..	16	..
Killkivan	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	91	..	..	..	..
Maryborough	218	19	2,843	1,114	..	192	51	1,800	8	..	..	..	..	..	..	..	2	..	..	..	..
Mount Perry	..	30	30	..	..	9	..	214	..	..	..	..	..	..	..	..	..	..	..	..	..
Nanango	..	..	..	..	1,101	..	..	..	23	75	..	..	1,645	339	..	..	426	21,105	..	12	..
Tiaro	1,550	700	320	513	..	274	40	314	14	..	..	..	..	..	..	..	118	..	..	..	..
Wienholt	353	200	595	506	7,991	1,030	511	104	3	..	..	..	2,633	37	..	..	1,471	800	..	120	10
Total Wide Bay	55,930	6,817	10,227	14,283	9,093	3,755	974	6,023	128	75	1,745	..	7,198	401	..	..	2,970	50,019	..	158	10
Downs Division.																					
Allora	60	..	..	..	12	..	..	500	..	5,813	..	..	..	437	..	..	..	..	..	19,614	..
Chinchilla	..	..	..	..	..	..	..	..	..	60	..	..	..	..	..	..	..	1,320	..	..	..
Clifton	..	..	..	..	..	..	..	..	..	17,369	..	..	..	2,592	..	..	1	..	420	26,824	..
Condamine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dalby	..	..	339	..	..	..	..	..	..	12,790	..	..	..	15	..	..	40	..	98	914	..
Goondiwindi	..	..	..	..	100	..	..	200	..	..	..	..	..	..	..	..	..	..	..	..	..
Inglewood	..	..	73	..	..	..	..	358	..	..	..	..	..	..	..	..	..	300	..	475	..
Killarney	238	2	280	..	8	45	..	220	..	402	..	..	..	105	..	..	2	..	..	713	..
Oakey	..	..	..	..	..	..	..	..	..	3,740	..	..	..	2,720	..	40	22	..	260	2,538	..
Pittsworth	..	..	..	..	..	..	..	..	..	2,228	..	..	..	1,178	..	20	..	..	..	5,003	29
Stanthorpe	76,081	3,370	45,657	1,985	121	18,648	708	130,877	18	..	..	..	..	..	..	..	..	..	..	..	..
Texas	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	13,160	21	..	..
Toowoomba	476	..	1,112	144	73	857	20	318	7	3,252	..	..	..	76	..	..	..	..	..	410	..
Warwick	2,115	5	4,206	677	468	1,193	..	2,302	..	3,195	..	..	..	2,079	..	302	..	..	181	3,737	..
Total Downs	78,970	3,377	51,667	2,806	782	20,743	728	134,775	25	48,849	..	..	..	9,202	..	362	65	14,780	980	60,228	29

Table No. 33—*continued.*

VEGETABLE AND MISCELLANEOUS CROPS—PRODUCTION, 1937. (For Areas see Table No. 30.)

Division.	Vegetables.									Miscellaneous Crops.										
	Beans.		Cabbages and Cauliflowers.	Cucumbers.	Onions.	Peas.		Tomatoes.	Turnips.	Canary Seed.	Coffee.	Copra.	Cow Peas.	Grass Seed.	Linseed.	Lucerne Seed.	Mangel Wurzel.	Millet (Broom).	Millet (Seed).	Panicum Seed.	Sunflower Seed.
	Green.	Dried.				Green.	Dried.														
	Bags.	Bushels.	Dozen.	Dozen.	Cwt.	Bags.	Bushels.	Bushels.	Tons.	Cwt.	Lb.	Tons.	Bushels.	Cwt.	Lb.	Cwt.	Tons.	Lb. Straw.	Cwt.	Cwt.	Cwt.
Maranoa Division.																					
Bollon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dirranbandi	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mitchell	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Roma	..	..	62	..	..	..	..	30	2	..	..	..	..	120	..	..	..	..	..	..	..
St. George	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Surat	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Yeulba	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total Maranoa	..	..	62	..	..	..	..	30	2	..	..	..	..	120	..	..	..	..	..	..	..
South-Western Division.																					
Adavale	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Augathella	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Charleville	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cunnamulla	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Eulo	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hungerford	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Quilpie	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Thargomindah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total South-Western	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total South Queensland	*195,284*	*21,344*	*295,432*	*132,211*	*89,624*	*50,210*	*2,874*	*358,246*	*545*	*48,954*	*7,077*	..	*7,313*	*9,993*	..	*362*	*8,713*	*121,536*	*980*	*60,544*	*44*
Port Curtis Division.																					
Banana	10	..	2,020	110	200	9	..	550	..	..	..	..	..	200	..	..	..	..	..	..	..
Gladstone	943	6	1,336	1,089	1	753	100	21,122	8	..	..	..	..	4	..	..	22	..	..	..	..
Monto	..	..	..	..	210	..	..	..	..	..	..	..	194	110	..	..	91	9,740	..	..	..
Mount Morgan	181	92	570	1,231	..	240	..	2,087	4	..	..	..	..	68	..	..	26	29,199	4	..	..
Rockhampton	691	110	4,960	1,392	53	983	31	3,571	7	..	..	..	..	45	..	..	26	965	..	10	..
St. Lawrence	..	..	..	..	..	30	20	88	..	..	..	..	..	..	..	..	..	..	..	..	..
Taroom	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	400	..	..	..
Total Port Curtis	1,825	208	8,886	3,822	464	2,015	151	27,418	19	..	..	..	194	427	..	..	165	40,304	4	10	..
Central-Western Division.																					
Alpha	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Aramac	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Barcaldine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Blackall	15	..	..	..	60	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Clermont	..	..	139	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Emerald	..	25	192	150	..	..	..	1,500	..	..	..	..	..	..	..	..	..	..	..	..	..
Longreach	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Muttaburra	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Springsure	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tambo	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total Central-Western	15	25	331	150	60	..	..	1,500	..	..	..	..	..	..	..	..	..	..	..	..	..

Far Western Division.																					
Boulia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diamantina	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Isisford	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Jundah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Windorah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Winton	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total Far-Western	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total Central Queensland	*1,840*	*233*	*9,217*	*3,972*	*524*	*2,015*	*151*	*28,918*	*19*	..	..	..	*194*	*427*	..	..	*165*	*40,304*	*4*	*10*	..
Edgecumbe Division.																					
Ayr	120	..	87	..	..	..	..	551	..	..	..	..	..	..	..	..	..	..	..	..	..
Bowen	26	..	612	35,562	7	27	..	99,815	..	..	..	..	..	..	..	..	10	..	..	..	..
Cape River	..	..	1,030	238	..	..	..	107	5	..	..	..	..	..	..	..	..	..	..	..	..
Charters Towers	103	25	538	667	..	82	..	494	..	..	..	..	..	..	..	..	..	..	..	..	..
Collinsville	..	40	100	20	..	..	..	300	..	..	..	..	..	..	..	..	..	..	..	..	..
Mackay	27	10	1,002	647	63	23	2	1,141	6	..	..	..	..	..	..	..	1	..	..	..	..
Proserpine	..	..	61	204	..	..	..	502	..	..	..	..	..	..	..	..	..	..	..	..	..
Ravenswood	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Townsville	266	139	785	1,546	..	..	..	5,533	2	..	..	..	..	..	..	..	..	2,240	..	..	..
Total Edgecumbe	542	214	4,215	38,884	70	132	2	108,443	13	..	..	..	..	..	..	..	11	2,240	..	..	..
Rockingham Division.																					
Atherton	302	6	1,815	..	..	150	..	301	4	..	..	..	479	..	..	..	2	..	..	..	..
Cairns	26	..	189	..	..	20	..	209	..	..	..	..	..	4	..	..	..	..	..	..	..
Cardwell	832	125	513	..	..	..	70	2,031	..	..	..	..	..	6	..	..	..	..	..	..	..
Chillagoe	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Douglas	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Herberton	8	..	724	100	..	9	..	64	2	..	..	..	..	20	..	..	..	..	..	..	..
Ingham	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Innisfail	2	..	55	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..
Mareeba	42	..	4,320	225	..	19	..	1,962	7	..	..	..	1,669	2	..	..	..	..	..	..	..
Total Rockingham	1,212	131	7,616	325	..	198	70	4,570	13	..	..	..	2,148	32	..	..	2	..	..	..	..
Peninsula Division.																					
Coen	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cook	..	228	40	..	..	..	..	29	..	..	..	..	..	..	..	..	..	..	..	..	..
Somerset	14	60	100	100	..	..	..	40	1	..	..	4	..	..	..	..	..	..	..	..	..
Total Peninsula	14	288	140	100	..	..	..	69	1	..	..	4	..	..	..	..	..	..	..	..	..
North-Western Division.																					
Burke	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Camooweal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cloncurry	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Croydon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Etheridge	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hughenden	10	2	100	25	4	..	10	240	..	..	..	..	..	..	..	..	..	..	..	..	..
Julia Creek	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mount Isa	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Norman	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Richmond	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total North-Western	10	2	100	25	4	..	10	240	..	..	..	..	..	..	..	..	..	..	..	..	..
Total North Queensland	*1,778*	*635*	*12,071*	*39,334*	*74*	*330*	*82*	*113,322*	*27*	..	..	*4*	*2,148*	*32*	..	..	*13*	*2,240*	..	..	..
Grand Total, State—																					
1937	198,902	22,212	316,720	175,517	90,222	52,555	3,107	500,486	591	48,954	7,077	4	9,655	10,452	..	362	8,891	164,080	984	60,554	44
1936	167,859	27,222	320,459	183,287	35,605	47,110	5,194	476,251	683	15,891	9,230	5	10,929	12,637	..	87	5,369	280,254	1,196	21,961	383
Increase, 1937	31,043	..	..	..	54,617	5,445	..	24,235	..	33,063	..	..	..	..	..	275	3,522	..	..	38,593	..
Decrease, 1937	..	5,010	3,739	7,770	..	..	2,087	..	92	..	2,153	1	1,274	2,185	..	..	..	116,174	212	..	339

Table No. 34.

LAND UNDER CULTIVATION AND THE AREA UNDER EACH CROP IN QUEENSLAND—RETURN FOR TEN YEARS.

Year.	Total Extent of Land under Cultivation.	Land in Fallow Lying Idle, &c.	Total Extent of Land under Crop.	Area Under Each Description of Crop.													
				Grain Crops.							Potatoes.		Pumpkins.	Cotton.	Sugar-Cane. b		Arrow-root.
				Wheat.	Oats.	Barley. Malting.	Barley. Other.	Maize.	Rye.	Rice.	English.	Sweet.			Area Crushed.	Total Area.	
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1928	1,268,475	223,843	1,044,632	218,069	916	5,188	2,466	192,173	70	3	8,154	1,841	8,746	20,316	215,674	283,476	538
1929	1,269,242	223,007	1,046,235	204,116	2,003	6,318	3,436	171,614	27	1	8,116	2,066	11,014	15,003	214,880	291,660	601
1930	1,331,513	187,297	1,144,216	272,316	5,132	6,148	2,286	172,176	29	..	10,277	2,015	14,437	22,652	222,044	296,070	761
1931	1,401,932	185,530	1,216,402	248,783	1,364	1,701	522	147,669	7	..	10,374	1,874	13,143	22,452	233,304	309,818	789
1932	1,426,648	181,010	1,245,638	250,049	3,733	3,275	1,515	98,487	18	..	9,743	1,791	9,546	29,995	205,046	291,136	691
1933	1,499,996	186,558	1,313,438	232,053	5,207	5,728	3,037	166,948	47	..	11,936	1,791	13,518	68,203	228,154	311,910	797
1934	1,512,591	215,972	1,296,619	221,729	4,566	6,600	3,004	160,607	75	..	11,666	2,271	12,272	43,397	218,426	303,926	835
1935	1,574,166	239,476	1,334,690	239,631	6,823	4,285	2,095	157,370	161	..	13,620	2,503	13,368	54,947	228,515	314,700	860
1936	*a*	*a*	1,506,423	283,648	7,932	4,319	2,333	181,266	27	..	13,448	2,906	20,605	62,200	245,918	338,686	865
1937	*a*	*a*	1,618,738	372,935	7,709	5,923	2,732	174,243	2	..	10,817	2,774	24,391	52,692	245,131	348,840	774

Year.	Area Under Each Description of Crop—*continued*.																		
	Tobacco.	Coffee.		Hay (all kinds).	Green Forage (all kinds).	Grape Vines.		Bananas.		Pineapples.		Oranges and Mandarins.		Mangoes.		Straw-berries.	Apples.		All Other Crops.
		Bear-ing.	Total Area.			Bear-ing.	Total Area.	Bearing.	Total Area.	Bear-ing.	Total Area.	Bear-ing.	Total Area.	Bear-ing.	Total Area.		Bear ing.	Total Area.	
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1928	138	7	11	55,498	180,524	1,627	1,787	13,185	19,750	3,259	4,734	2,752	3,734	208	249	152	3,502	4,133	26,160
1929	159	11	12	49,745	208,624	1,617	1,749	12,874	19,357	3,393	5,144	2,874	3,872	182	204	182	3,475	4,012	24,544
1930	71	12	12	52,228	217,282	1,519	1,687	12,565	18,030	3,983	5,543	2,805	3,773	155	185	173	3,427	4,039	24,019
1931	382	17	21	59,601	309,957	1,514	1,749	10,885	14,764	4,394	5,789	2,965	3,969	146	169	126	3,745	4,536	28,031
1932	3,817	7	9	64,076	392,762	1,586	1,868	7,235	10,589	4,534	5,862	2,824	3,622	132	160	114	3,527	4,741	28,504
1933	4,004	5	7	92,943	311,462	1,586	1,963	6,777	10,926	4,551	5,889	2,696	3,424	178	208	126	3,488	5,199	35,864
1934	2,081	18	23	86,477	338,312	1,517	1,926	7,027	10,323	4,603	5,584	2,836	3,421	176	211	138	3,451	5,373	37,948
1935	3,117	14	18	71,309	379,651	2,025	2,470	7,004	8,500	4,545	5,779	2,635	3,222	152	185	140	3,413	5,452	44,484
1936	3,973	20	20	62,758	429,782	1,944	2,501	4,983	7,305	4,408	6,314	2,750	3,534	273	363	169	3,211	5,358	66,111
1937	3,812	15	15	73,629	441,560	2,224	2,716	5,288	8,174	4,228	6,549	3,297	4,324	449	554	186	3,315	5,629	67,758

a Not available.   *b* Excluding cut for Green Fodder.

Table No. 35.

PRODUCE OF PRINCIPAL CROPS GROWN IN QUEENSLAND—RETURN FOR TEN YEARS.

Quantity of Produce.

Year.	Grain Crops							Potatoes.		Pumpkins.	Cotton. (Seed Cotton).	Sugar-cane.	
	Wheat.	Oats.	Barley.		Maize.	Rye.	Rice.	English.	Sweet.			Weight of Cane Crushed.	Sugar made at 94 % Net Titre.
			Malting.	Other.									
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Tons.	Tons.	Tons.	Lb.	Tons.	Tons.
1928	2,515,561	13,737	76,392	31,201	5,135,607	1,092	121	9,687	7,572	20,922	12,290,910	3,736,311	520,620
1929	4,235,172	38,494	139,604	65,963	4,376,412	364	12	13,214	7,017	27,591	8,024,502	3,581,265	518,516
1930	5,107,561	94,452	134,226	39,337	4,565,850	330	..	18,489	7,109	38,354	17,022,897	3,528,660	516,783
1931	3,863,894	20,352	28,882	7,515	3,780,597	54	..	17,189	6,802	33,222	15,244,644	4,034,300	581,276
1932	2,493,902	58,729	67,792	33,241	1,653,853	239	..	14,017	4,106	18,153	6,270,116	3,546,370	514,027
1933	4,361,614	69,534	99,786	52,694	3,715,764	840	..	20,123	5,344	33,440	17,718,306	4,667,122	638,559
1934	4,076,181	82,198	111,588	45,016	4,142,079	1,927	..	21,627	9 577	31,632	26 924,179	4,271,380	611,161
1935	2,690,316	119,459	64,891	26,475	3,504,045	2,764	..	24,765	10,691	33,341	20,785,418	4,220,435	610,080
1936	2,016,236	22,417	27,302	10,076	3,148,814	41	..	15,826	11,959	40,038	19,198,600	5,170,571	744,676
1937	3,749,443	79,323	84,598	36,423	2,628,458	24	..	16,565	10,047	56,089	11,792,828	5,132,886	763,242

Quantity of Produce—*continued.*

Year.	Arrowroot (Tubers).	Tobacco (Cured Leaf).	Coffee.	Hay (all Kinds).	Ensilage.	Grape Vines.		Bananas.	Pineapples.	Oranges and Mandarins.	Mangoes.	Strawberries.	Apples.
						Grapes.	Wine.						
	Tons.	Lb.	Lb.	Tons.	Tons.	Lb.	Gallons.	Bunches.	Dozens.	Bushels	Bushels.	Quarts.	Bushels.
1928	5,938	111,885	2 102	85,651	4,037	3,946,788	37,210	3,265,161	938,335	377,177	78,609	161,584	183,461
1929	4,870	192,943	8,227	79,583	2,933	4,230,703	48,174	2,940,683	857,116	272,801	45,623	330,287	177,062
1930	10,098	58,594	6,458	87,146	4,880	5,366,062	48,899	3,068,143	1,000,508	308,967	31,924	209,413	217,317
1931	8,276	260,670	8,455	91,275	5,819	4,917,808	41,456	2,950,678	1,181,654	304,661	36,781	148,329	179,745
1932	6,878	2,303,861	4,200	82,104	6,305	5,296,980	35,301	1,869,883	1,175,870	321,905	23,135	111,667	238,565
1933	9,950	2,079,754	5,580	144,250	8,515	5,053,022	31,796	2,027,505	1,355,300	294,396	11,126	158,732	298,372
1934	9,712	1,025,049	13.766	154,157	7,566	4,825.223	38,051	1,905,900	1,126,831	388,207	30,133	205,005	284,893
1935	10,239	1,555,083	6,210	122,687	5,644	5,219,521	22,569	1,738,378	1,338,415	287,769	18,715	218,060	249,998
1936	10,204	2,005,031	9,230	73,787	*a*	4,997,851	29,121	1,447,244	1,227,734	367,439	51,152	246,973	215,279
1937	7,494	2,317,066	7.077	98,218	14,831	5,322,885	16,909	1,517,451	1,331,291	293,113	72,092	310,835	269,410

a Not available.

Table No. 36.

SHOWING THE GROSS VALUE OF PRINCIPAL CROPS RAISED IN QUEENSLAND—RETURN FOR TEN YEARS.

YEAR.	Wheat	Oats.	BARLEY.		Maize.	Rye.	Rice.	POTATOES.		Pumpkins.	Cotton (Seed Cotton).	Sugar-cane. (Crushed).	Arrowroot (Tubers).
			Malting.	Other.				English.	Sweet.				
	£	£	£	£	£	£	£	£	£	£	£	£	£
1928	639,372	3,663	18,780	7,865	802,439	428	41	80,322	26,187	125,532	213,832	7,209,778	11,876
1929	1,036,735	9,664	29,520	13,605	1,016,604	146	4	225,739	52,335	255,217	186,121	7,163,024	9,740
1930	1,030,642	22,039	24,608	6,843	965,487	132	..	165,245	25,918	138,234	354,652	7,040,415	21,206
1931	753,435 *a*	3,166	3,476	792	518,257	22	..	132,499	23,342	144,350	307,975 *k*	7,526,233	11,583
1932	447,169 *b*	10,400	10,169	4,986	389,345	74	..	108,630	21,043	89,252	125,106 *l*	6,852,717	12,037
1933	748,289 *c*	11,372	17,252	8,562	681,223	266	..	125,769	14,019	109,377	282,740 *m*	7,247,122	13,432
1934	776,689 *d*	14,214	19,501	6,253	562,095	434	..	180,225	28,730	119,224	397,263 *n*	6,934,764	10,683
1935	597,059 *e*	20,900	11,895	4,695	674,117	690	..	229,076	42,764	134,321	376,456 *o*	7,072,049	10,239
1936	580,000 *f*	3,735	6,047	2,250	714,570	12	..	170,130	59,795	143,253	330,321 *p*	8,297,938	10,500
1937	781,135 *f*	15,535	18,998	6,752	695,900	10	..	124,237	60,282	266,943	205,025 *q*	8,572,730	12,030

YEAR.	Tobacco (Cured Leaf).	Coffee.	Hay (All Kinds).	Ensilage. *	Grapes.	Bananas.	Pineapples.	Oranges and Mandarins.	Mangoes.	Straw-berries.	Apples.	Tomatoes.	Cabbages and Cauli-flowers.	All Crops.
	£	£	£	£	£	£	£	£	£	£	£	£	£	£
1928	7,594	79	453,204	8,416	93,768	960,000	225,413	155,681	24,292	14,700	64,020	234,650	96,079	12,709,041
1929	12,670	309	447,284	6,334	81,241	927,923	212,326	175,900	18,971	33,143	95,355	272,884	127,076	13,803,792
1930	5,640	242	430,571	9,939	85,776	903,113	212,528	122,943	10,602	14,615	77,601	208,743	85,352	12,821,665
1931	27,153	318	401,133	11,238	79,889	621,983	254,382	116,787	12,945	7,880	67,195	204,396	75,017	12,190,794
1932	230,386	158	413,961	12,668	93,319	427,208	196,914	122,808	7,432	7,038	94,337	165,272	80,406	11,305,731
1933	129,985	209	608,165	12,971	68,931	470,776	203,743	119,905	3,410	9,425	96,814	192,818	76,684	12,303,271
1934	69,400	516	614,010	11,706	68,715	335,685	207,870	97,900	10,193	4,615	89,940	194,140	47,333	11,905,806
1935	140,880	232	607,570	10,545	66,047	302,560	247,085	105,623	8,185	8,175	70,987	208,531	74,136	12,380,165
1936	165,916	345	452,000	†	70,911	282,850	245,230	109,637	16,380	10,290	70,196	213,125	80,415	13,557,006
1937	197,047	354	619,998	29,306	56,771	383,764	268,681	116,031	22,170	10,361	80,966	198,005	63,344	14,931,267

a Includes Bounty, £72,188.
b Includes Bounty, £40,744.
c Includes Bounty, £76,455.
d Includes Bounty, £100,700
e Includes Relief and Special Assistance, £42,799.
f No Bounty, Relief, or Special Assistance was paid.

k Includes Bounty, £90,733.
l Includes Bounty, £30,833.
m Includes Bounty, £73,540.
n Includes Bounty, £84,024.
o Includes Bounty, £106,539.
p Includes Bounty, £87,778.
q Includes Bounty, £41,772.

* Not included in Total Value all Crops.
† Not available.

Table No. 37.

AVERAGE YIELD PER ACRE OF PRINCIPAL CROPS IN QUEENSLAND—RETURN FOR TEN YEARS.

Year.	Grain Crops.							Potatoes.		Pumpkins.	Cotton (Seed Cotton).	Sugar.		Arrowroot (Tubers).	Tobacco (Cured Leaf).	Coffee.	Hay (all Kinds).	Grapes.	Bananas.	Pineapples.	Oranges and Mandarins.	Mangoes.	Strawberries.	Apples.
	Wheat.	Oats.	Barley.		Maize.	Rye.	Rice.	English.	Sweet.			Cane per Acre Crushed.	Sugar per Acre Crushed.											
			Malting.	Other.																				
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Tons.	Tons.	Tons.	Lb.	Tons.	Tons.	Tons.	Lb.	Lb.	Tons.	Lb.	Bunches.	Doz.	Bushels.	Bushels.	Quarts.	Bushels.
1928 ..	11·54	15·00	14·72	12·65	26·72	15·60	40·33	1·19	4·11	2·39	605	17·32	2·41	11·04	811	300	1·54	2,426	248	288	137	378	1,063	52
1929 ..	20·75	19·22	22·10	19·20	25·50	13·48	12·00	1·63	3·40	2·51	535	16·67	2·41	8·10	1,213	718	1·60	2,616	228	253	95	251	1,815	51
1930 ..	18·76	18·40	21·83	17·21	26·52	11·38	..	1·80	3·53	2·66	751	15·89	2·33	13·29	825	538	1·67	3,533	244	251	110	206	1,210	63
1931 ..	15·53	14·92	16·98	14·40	25·60	7·71	..	1·66	3·63	2·53	679	17·29	2·49	10·49	682	497	1·53	3,248	271	269	103	252	1,177	48
1932 ..	9·97	15·73	20·70	21·94	16·79	13·28	..	1·44	2·29	1·90	209	17·30	2·51	9·95	604	600	1·28	3,340	258	259	114	175	980	66
1933 ..	18·80	13·35	17·42	17·35	22·26	17·87	..	1·69	2·98	2·47	260	20·46	2·80	12·48	519	1,116	1·55	3,186	299	298	109	63	1,260	86
1934 ..	18·38	18·00	16·91	14·99	25·79	25·69	..	1·85	4·22	2·58	620	19·56	2·80	11·63	493	765	1·78	3,181	271	245	137	171	1,486	83
1935 ..	11·23	17·51	15·14	12·64	22·27	17·17	..	1·82	4·27	2·49	378	18·47	2·67	11·91	499	444	1·72	2,578	247	293	109	123	1,557	73
1936 ..	7·11	2·83	6·32	4·32	17·37	1·52	..	1·18	4·12	1·94	309	21·03	3·03	11·80	505	462	1·18	2,571	290	279	112	187	1,461	67
1937 ..	10·05	10·29	14·28	13·33	15·09	12·00	..	1·53	3·62	2·30	224	20·94	3·11	9·68	608	472	1·33	2,393	287	315	89	161	1,671	81
Average*	14·21	14·53	16·64	14·80	22·39	13·57	22·17	1·58	3·62	2·38	457	18·49	2·66	11·04	676	594	1·52	2,907	264	275	112	197	1,368	67

* Average of annual yields per acre during last ten years.

Table No. 38.

AVERAGE YIELD PER ACRE OF CROPS IN EACH DIVISION OF THE STATE FOR THE YEAR 1937.

Division.	Grain Crops.							Potatoes.		Sugar-cane (to Acres Crushed)	Cotton (Seed Cotton).	Arrow-root (Tubers).	Tobacco (Dried Leaf).	Coffee.	Pump-kins.	Hay (All Kinds).	Grapes.	Bananas.	Pine-apples.	Oranges and Man-darins.
	Wheat.	Oats.	Barley.		Maize.	Rye.	Rice.	English.	Sweet.											
			Malting.	Other.																
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Tons.	Tons.	Tons.	Lb.	Tons.	Lb.	Lb.	Tons.	Tons.	Lb.	Bunches.	Dozens.	Bushels.
Moreton	8·11	8·83	18·64	19·72	11·97	15·00	..	1·64	3·54	18·21	231	10·20	1,033	533	2·26	1·74	2,138	292	341	66
Wide Bay	5·60	11·19	7·50	10·67	11·72	..	..	1·15	3·94	15·54	154	6·61	265	349	2·54	1·47	1,519	256	271	125
Downs	10·46	10·20	14·24	13·08	8·74	9·00	..	1·58	0·56	..	141	..	824	..	1·71	0·78	2,982	..	..	34
Maranoa	5·21	..	..	..	11·87	..	..	0·56	1·67	..	44	..	..	..	1·00	0·59	766	..	..	56
South-Western	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1·50	3·00	2,186	..	..	63
Port Curtis	5·02	..	..	2·85	12·85	..	..	1·25	1·66	15·26	241	4·00	576	..	2·83	1·66	2,652	312	255	102
Central-Western	..	..	..	..	6·29	..	..	1·33	1·00	..	97	..	..	..	0·77	2·00	1,091	..	..	137
Far-Western	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Edgecumbe	..	..	..	..	17·23	..	..	2·04	2·00	19·03	259	..	500	..	1·18	2·14	2,229	275	197	82
Rockingham	..	..	10·00	..	42·10	..	..	2·27	4·03	24·80	198	10·00	578	..	1·00	1·51	1,529	208	241	100
Peninsula	..	..	..	..	27·20	..	..	0·50	1·20	..	..	..	..	..	0·57	..	..	82	18	36
North-Western	..	..	..	..	15·00	..	..	2·75	1·00	..	..	..	..	..	2·00	..	20	124	..	49
Total Queensland—																				
1937	10·05	10·29	14·28	13·33	15·09	12·00	..	1·53	3·62	20·94	224	9·68	608	472	2·30	1·33	2,393	287	315	89
1936	7·11	2·83	6·32	4·32	17·37	1·52	..	1·18	4·12	21·03	309	11·80	505	462	1·94	1·18	2,571	290	279	112
Increase, 1937	2·94	7·46	7·96	9·01	..	10·48	..	0·35	..	..	..	..	103	10	0·36	0·15	..	..	36	..
Decrease, 1937	..	..	..	..	2·28	..	..	..	0·50	0·09	85	2·12	..	..	..	..	178	3	..	23

Table No. 39.

RETURN SHOWING THE AREA, YIELD, AND GROSS VALUE OF CROPS FOR THE YEAR 1937.

Description of Crop.		Area not Bearing.	Area Bearing.	Yield.	Gross Value. *a*
		Acres.	Acres.		£
Cereals	Barley, Malting	..	5,923	84,598 bushels	18,998
	Barley, Other	..	2,732	36,423 bushels	6,752
	Maize	..	174,243	2,628,458 bushels	695,900
	Oats	..	7,709	79,323 bushels	15,535
	Wheat	..	372,935	3,749,443 bushels	781,135 *b*
	Rye	..	2	24 bushels	10
Grass Seed		..	2,671	10,452 cwt.	14,180 *c*
Green Forage (All Kinds)		..	441,560	..	1,177,000
Hay	Lucerne	..	51,084	75,751 tons	511,317
	Oaten	..	4,187	4,814 tons	33,698
	Wheaten	..	6,004	5,784 tons	27,474
	Other	..	12,354	11,869 tons	47,509
Straw	Oaten	..	..	277 tons	1,330
	Wheaten	..	..	1,325 tons	6,359
	Other	..	..	214 tons	1,027
Pulse	Beans	..	381	22,212 bushels	11,106
	Peas	..	118	3,107 bushels	1,242
Root Crops	Arrowroot (Tubers)	..	774	7,494 tons	12,030
	Carrots	..	118	514 tons	7,644
	Cassava	..	1	2 tons	6
	Ginger	..	2	115 cwt.	160
	Mangolds	..	1,601	8,891 tons	17,782
	Onions	..	1,515	90,222 cwt.	20,300
	Potatoes, English	..	10,817	16,565 tons	124,237
	Potatoes, Sweet	..	2,774	10,047 tons	60,282
	Turnips (including Swede Turnips)	..	176	591 tons	2,364
Grapes	For Table Use	492	2,224	5,059,135 lb.	55,902
	For Wine			263,750 lb.	869
	For Drying Purposes	..	..	..	..
Sugar-cane		92 208 *d*	245,131 *e*	5,132,886 tons *e*	8,572,730
Sugar-cane (cut for plants)		..	11,506	230,000 tons	345,000
Tobacco		..	3,812	2,317,066 lb.	197,047
Market Gardens		..	947	..	50,975
Orchards and Fruit Gardens	Avocadoes	8	3	200 bushels	257
	Apples	2,314	3,315	269,410 bushels	80,966
	Apricots	98	184	13,912 bushels	7,867
	Bananas	2,886	5,288	1,517,451 bunches	383,764
	Cape Gooseberries	..	8	5,375 quarts	112
	Cherries	5	3	255 bushels	280
	Citrons, Grape Fruit, and Seville Oranges	1	12	578 bushels	114
	Custard Apples	51	248	29,860 bushels	11,996
	Figs	9	26	3,164 bushels	1,318
	Lemons	168	228	30,466 bushels	12,529
	Mangoes	105	449	72,092 bushels	22,170
	Nectarines	6	48	3,600 bushels	1,440
	Nuts (Almonds, Litchi, Pecan, Queensland, Tung Oil, Walnuts)	62	40	10,594 lb.	290
	Oranges and Mandarins	1,027	3,297	293,113 bushels	116,031
	Papaws	389	442	177,573 dozens	18,598
	Passion Fruit	..	284	18,764 bushels	11,034
	Peaches	242	1,088	90,113 bushels	27,785
	Pears	87	232	26,179 bushels	6,545
	Persimmons	..	1	126 bushels	38
	Pineapples	2,321	4,228	1,331,091 dozen	268,681
	Plums	268	945	76,017 bushels	26,664
	Quinces	..	12	941 bushels	235
	Strawberries	..	186	310,835 quarts	10,361
	Water Melons and Rock Melons	..	612	38,715 dozen	12,610
	Other (Gardens and Orchards)	13	149	..	5,215
Other Crops	Broom Millet	..	759	164,080 lb.	3,193
	Cabbages and Cauliflowers	..	1,683	316,720 dozen	63,344
	Canary Seed	..	17,262	48,954 cwt.	70,820
	Coffee	..	15	7,077 lb.	354
	Copra	..	360	4 tons	60
	Cotton	..	52,692	11,792,828 lb. (seed cotton)	205,025 *f*
	Cowpeas	..	1,607	9,655 bushels	4,827
	Cucumbers	..	525	175,517 dozen	16,517
	Green Beans	..	2,939	198,902 sugar bags	98,120
	Green Peas	..	1,088	52,555 sugar bags	16,280
	Linseed	..	..	..	..
	Lucerne Seed	..	154	362 cwt.	2,534
	Millet Seed	..	172	984 cwt.	520 *g*
	Panicum Seed	..	10,052	60,554 cwt.	27,250
	Peanuts	..	12,370	11,300,294 lb.	112,620
	Pumpkins	..	24,391	56,089 tons	266,943
	Sunflower Seed	..	10	44 cwt.	55
	Tomatoes	..	5,275	500,486 bushels	198,005
Total under Crop		102,755	1,515,983	..	14,931,267
		1,618,738			

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a By " Gross Value " is meant the value which these crops would have realised in the principal wholesale markets of the State.

b No Bounty, Relief, or Special Assistance in 1937.

c Grass Seed includes :—	Acres.	Cwt.	£
Prairie	75	900	1,260
Saccaline	84	438	438
Sudan Grass	1,958	8,050	11,270
Sorghum	41	476	476
Rhodes	239	369	517

d Excludes areas cut for plants (11,506 acres) and green fodder (4,363 acres).

e Area cut for crushing and tons of cane crushed.

f Includes Bounty, £41,772.

g Millet Seed includes :—	Acres.	Cwt.	£
French	111	820	470
Jap.	50	139	42

Table No. 40.

DATES OF PLANTING AND HARVESTING.

Principal Crops in Queensland.

Owing to the great size of Queensland, with its irregular rainfall and great climate differences, this information is of necessity rather indefinite. Times of planting and consequently times of harvesting vary according to the local conditions.

The following are the dates of planting and harvesting as nearly as can be ascertained :—

Crop.	Time of Planting.	Time of Harvesting.
Arrowroot	August to October	June, July, August
Barley (1) Skinless (2) Cape (3) Malting ..	For green fodder ; from third week in February at intervals until about second week in July. For grain ; usually sown in May	From mid October until end of November
Note.—Skinless and Cape Barley are mostly for feeding off, and malting barley for grain, although of course Skinless and Cape are also grown for grain.		
Canary Seed	Early planting for dual purposes, both fodder and seed made about the second to third week in April. Main planting in May, but may extend under favourable conditions till August	From mid October to end of November
Cotton	From first September to mid December, Central and South ; and till end of February, North	Beginning of March to end of October
Hay (1) Wheaten	From beginning of April to about middle of June, according to district	October and early November
Note.—A fair amount of hay is grown below the range between Toowoomba and Brisbane and harvested usually in October, as early maturing varieties are used.		
Hay (2) Oaten	March to end of May	Mid October to November
Maize	August to second week in January, according to district. Earlier districts, August, are usually fairly free from frost and "catch" crops are commonly planted. Main planting season in November in Southern and Central Queensland. In North Queensland (mainly Atherton Tableland) the season synchronises with the commencement of the wet season, usually starting about 1st January	May extend from latter end of December until latter end of August. Main harvest May, June, July
Potatoes	February and August	Three to four months after planting
Sorghum, Millet, &c., (including Broom Millet and Millet grown for Fodder)	August to end of January, according to district	Sorghums about five months from planting. Millets earlier—ten weeks
Note.—The practice of late sowing is followed in some districts to synchronise with the wet season. Broom Millet commonly planted from September to November (inclusive), is harvested within five months of time of planting Seed.		
Sugar	April to October	Crushing from June to December. Cane cutters start a day or two ahead of the crushers and thus keep them supplied
Tobacco	Mid October to early December, but late planting not advocated	April
Wheat	Main season May and June. Range of planting April to first week in August. Customary in some districts to plant slow-maturing varieties in April, either feeding it off to dairy cattle and sheep or ultimately allowing it to mature into grain. In some districts on the Downs, slow-maturing varieties for feeding off are sown in March.	Maranoa is earliest district. Harvesting in this district starts in some seasons in second week of October and continues to first week of November. In Darling Downs and other districts harvesting usually starts about the first week of November and is carried on until the end of that month.
	Fruit.	
Bananas	October, November, December, January, and February	All year
Citrus Fruits	May to August, February	April to October
Custard Apples	June to August	May to August
Deciduous Fruits	May to August	End of November to end of March
Grapes	August and September	December to end of April
Mangoes	February, June, and July	September to March
Papaws	September and October, February and March	Autumn and Winter
Passion Fruit	September and October, February and March	All year. Main crops Summer and Autumn. Light Spring crop.
Pineapples	September to February	Christmas to end of March and July and August are two main crops. Off crops any time of year
Strawberries	March and April	May and October

Brisbane, 1st December, 1938.

COLIN CLARK,
Government Statistician.

David Whyte, Government Printer, Brisbane.

1938.

QUEENSLAND

ANNUAL REPORT

OF THE

GOVERNMENT STATISTICIAN

ON

Live Stock and Pastoral Production

FOR

THE YEAR 1937

BRISBANE:
BY AUTHORITY: DAVID WHYTE, GOVERNMENT PRINTER.

1938.

QUEENSLAND.

Annual Report of the Government Statistician on Livestock and Pastoral Production for the Year 1937.

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Centesimal in 1937 (as at 31st December)	1	6
Numerical in 1937 (as at 31st December)	1	6
Increase, Proportional, during each year of last ten years	3	6
Killed for Farm or Station Use	31 51	17, 18 31
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In State, Return for ten years	2	6
Of Acres per Head in Pastoral Districts	4	7
Per Capita Population	4 36	7 22
Per Square Mile	4 36	7 22
Overland, Exported Alive	13 14, 15	9 10
Oversea, Exported Alive	13 14	9 10
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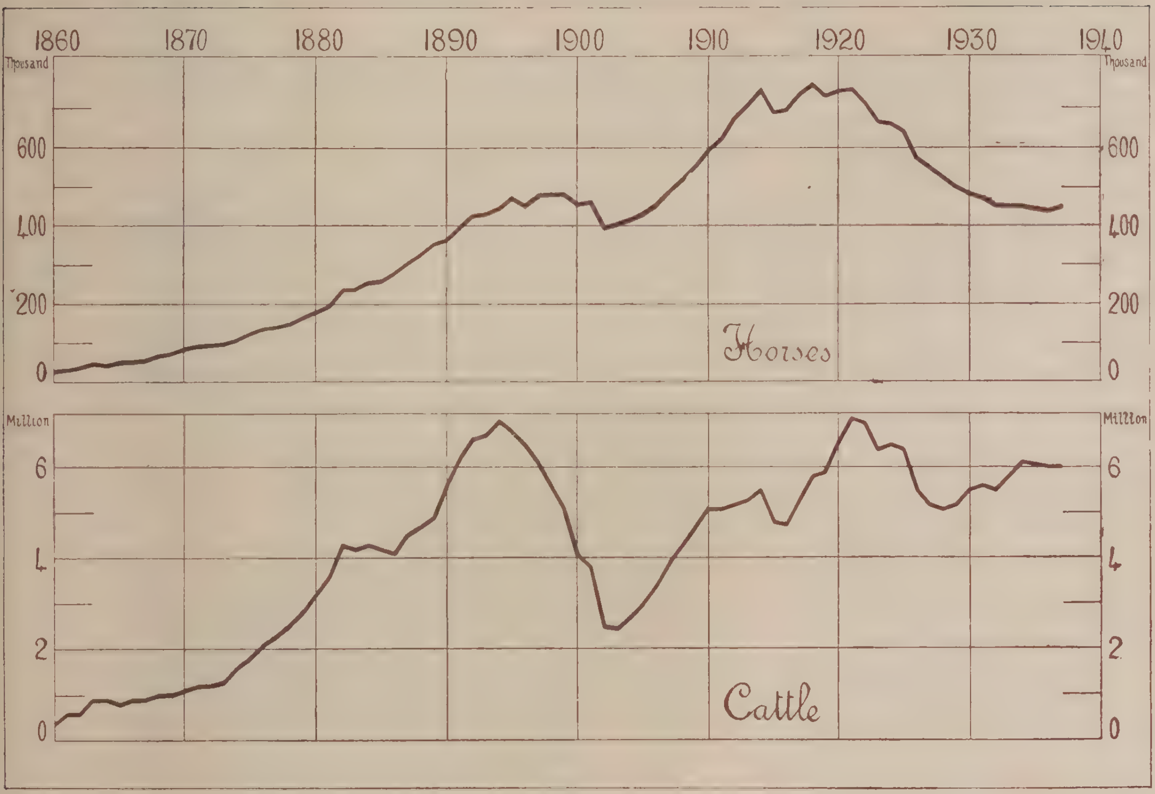
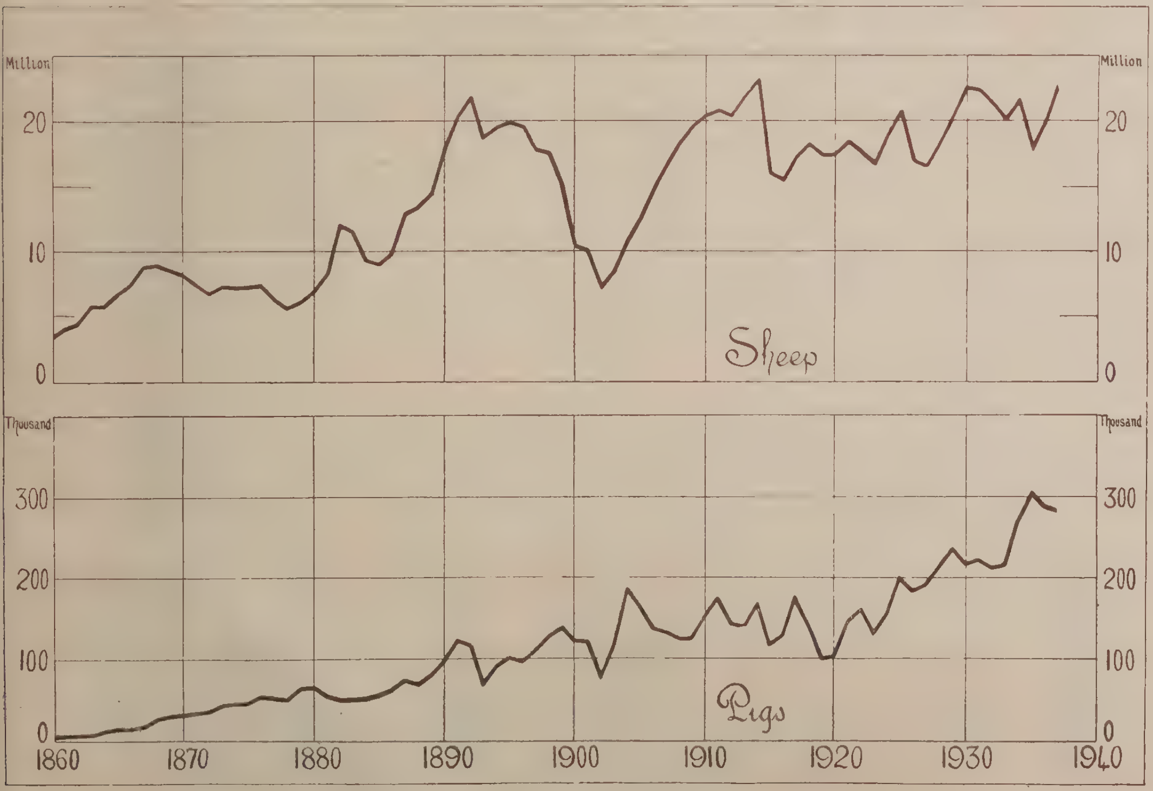
LIVESTOCK IN QUEENSLAND, SINCE 1860.





QUEENSLAND.

LIVE STOCK AND PASTORAL PRODUCTION

Table No. 1.

Return showing the Number of Live Stock in the State for Two Years, and the Increase or Decrease for the Year 1937.

At 31st December.	Horses.	Cattle.	Sheep.	Pigs.
1936	441,536	5,950,572	20,011,749	290,855
1937	446,777	5,959,165	22,497,970	282,941
Numerical Increase in 1937	5,241	8,593	2,486,221	..
Numerical Decrease in 1937	..	..	..	7,914
Centesimal Increase in 1937	1·19	0·14	12·42	..
Centesimal Decrease in 1937	..	..	..	2·72

Table No. 2.

Return for Ten Years showing the Number of Horses, Cattle, Sheep, and Pigs in the State.

At 31st December.	Horses.	Cattle.	Sheep.	Pigs.
1928	522,490	5,128,341	18,509,201	215,764
1929	500,104	5,208,588	20,324,303	236,037
1930	481,615	5,463,724	22,542,043	217,528
1931	469,474	5,550,399	22,324,278	222,686
1932	452,486	5,535,065	21,312,865	213,249
1933	450,024	5,781,170	20,072,804	217,448
1934	448,604	6,052,641	21,574,182	269,873
1935	441,913	6,033,004	18,060,093	304,888
1936	441,536	5,950,572	20,011,749	290,855
1937	446,777†	5,959,165	22,497,970	282,941

† Including 809 Mules and 52 Donkeys.

Table No. 3

Return for Ten Years showing the Centesimal Increase or Decrease in Live Stock.

Year ended 31st December.	Horses.	Cattle.	Sheep.	Pigs.
1928	—4·71	—1·87	11·22	12·41
1929	—4·28	1·56	9·81	9·40
1930	—3·70	4·90	10·91	—7·84
1931	—2·52	1·59	—0·97	2·37
1932	—3·62	—0·28	—4·53	—4·24
1933	—0·54	4·45	—5·82	0·20
1934	—0·32	4·70	7·48	24·11
1935	—1·49	—0·32	—16·29	12·97
1936	—0·09	—1·37	10·81	—4·60
1937	1·19	0·14	12·42	—2·72

—Decrease.

Table No. 4.

RETURN SHOWING THE DENSITY AND THE PROPORTION OF THE VARIOUS KINDS OF LIVE STOCK IN THE SEVERAL PASTORAL DISTRICTS AND THE NUMBER PER CAPITA IN THE STATE AS AT 31ST DECEMBER, 1937.

In Converting Horses and Cattle to Terms of Sheep, Ten Head of Sheep are Taken as Equal to One Horse or Head of Cattle.

storal District.	Area in Acres.	Centesimal Ratio of Area of District to Area of State.	Horses.			Cattle.			Sheep.			All Kinds in Terms of Sheep.		
			Acres per Head.	Number per Square Mile.	Percentage to Total in State.	Acres per Head.	Number per Square Mile.	Percentage to Total in State.	Acres per Head.	Number per Square Mile	Percentage to Total in State.	Acres per Head.	Number per Square Mile.	Percentage to Total in State
ke	65,383,040	15·24	2,110	0·30	6·94	107	5·96	10·22	25	25·19	11·44	7·29	87·83	10·37
nett	7,972,480	1·86	224	2·86	7·97	15	43·31	9·05	1,714	0·37	0·02	1·39	462·08	6·65
k..	63,601,920	14·82	1,902	0·34	7·49	121	5·28	8·81	127,204	0·01	0·00	11·39	56·21	6·45
ing Downs ..	16,249,600	3·79	264	2·43	13·80	30	21·09	8·99	5	120·32	13·58	1·80	355·54	10·43
gory North ..	54,266,240	12·64	5,340	0·12	2·27	317	2·02	2·87	32	19·86	7·49	15·53	41·22	4·04
gory South ..	31,617,920	7·37	5,629	0·11	1·26	333	1·92	1·59	103	6·23	1·37	24·10	26·56	1·52
hhardt	30,946,560	7·21	779	0·82	8·90	40	16·16	13·11	28	22·64	4·86	3·33	192·46	10·75
anoa	25,110,400	5·85	1,159	0·55	4·85	136	4·72	3·11	6	110·05	19·19	3·93	162·80	7·38
chell	35,431,680	8·26	1,769	0·36	4·48	560	1·14	1·06	6	104·46	25·70	5·36	119·51	7·64
eton	5,649,920	1·32	106	6·05	11·96	11	59·06	8·75	507	1·26	0·05	0·98	652·44	6·66
th Kennedy ..	21,832,960	5·09	478	1·34	10·22	41	15·78	9·04	6,131	0·10	0·02	3·74	171·29	6·75
Curtis	8,994,560	2·09	336	1·91	5·99	16	39·86	9·40	355	1·80	0·11	1·53	419·44	6·81
th Kennedy ..	19,528,960	4·55	844	0·76	5·18	51	12·47	6·38	70	9·14	1·24	4·53	141·40	4·98
rrego	37,333,760	8·70	2,699	0·24	3·10	353	1·81	1·78	11	57·53	14·92	8·20	78·05	5·26
ie Bay	5,200,000	1·21	208	3·08	5·59	15	42·84	5·84	2,258	0·28	0·01	1·39	459·48	4·31
STATE	429,120,000	100·00	960	0·67	100·00	72	8·89	100·00	19	33·55	100·00	4·93	129·09	100·00
mber per Capita Population			0·45			6·00			22·65			87·13		

Table No. 5.

The following table shows, from the latest information available, the live stock density in various countries

	Live Stock in Terms of Sheep per Square Mile.
Queensland	129
New South Wales	296
Victoria	469
Argentina	424
Australia	89
Germany	1,341
Great Britain and North Ireland	1,293
Irish Free State	1,757
U.S.S.R. (Russia)	99
Union of South Africa	356
United States of America	291

Table No. 6.

RETURN SHOWING NUMBER AND PROPORTION OF HORSES, CATTLE, SHEEP, AND PIGS IN THE SOUTHERN, CENTRAL, AND NORTHERN DIVISIONS OF THE STATE AS AT 31ST DECEMBER, 1937.

Division.	Horses.		Cattle		Sheep.		Pigs.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
Southern	223,222	49·96	2,488,634	41·76	11,164,673	49·62	251,488	88·88
Central	97,794	21·89	1,577,978	26·48	8,669,820	38·54	13,634	4·82
Northern	125,761	28·15	1,892,553	31·76	2,663,477	11·84	17·819	6·30
Totals, State ..	446,777	100·00	5,959,165	100·00	22,497,970	100·00	282,941	100·00

Table No. 7.

RETURN SHOWING NUMBER OF HORSES, CATTLE, AND SHEEP PER SQUARE MILE AND PER CAPITA OF POPULATION IN THE SOUTHERN, CENTRAL, AND NORTHERN DIVISIONS OF THE STATE AS AT 31ST DECEMBER, 1937.

Division.	Area in Square Miles.	Population. *	Horses.		Cattle.		Sheep.		All Kinds in Terms of Sheep.	
			Per Square Mile.	Per Capita of Population.	Per Square Mile.	Per Capita of Population.	Per Square Mile.	Per Capita of Population.	Per Square Mile.	Per Capita of Population.
Southern ..	209,980	699,796	1·06	0·32	11·85	3·56	53·17	15·95	182·32	54·71
Central ..	209,340	100,128	0·47	0·98	7·54	15·76	41·42	86·59	121·47	253·95
Northern ..	251,180	193,537	0·50	0·65	7·50	9·78	10·56	13·76	90·60	118·05
Totals ..	670,500	993,461	0·67	0·45	8·89	6·00	33·55	22·65	129·09	87·13

* Estimated as at 31st December, 1937.

Table No. 8.

RETURN SHOWING THE NUMBER OF HORSES IMPORTED AND EXPORTED INTO AND FROM THE STATE FOR THE YEAR 1937.

Horses Imported during 1937.					Horses Exported during 1937.				
Country.	Number.		Value.		Country.	Number.		Value.	
Oversea—			£	£	*Oversea—*			£	£
					British Malaya ..	6		96	
					French Indo-China	40		800	
					Hong Kong ..	50		760	
					India	1,687		26,165	
					Japan	15		733	
					Netherlands (East Indies)	128		2,220	
					Philippine Islands ..	63		1,180	
					Siam	240		4,800	
					South African Union	1		175	
							2,230		36,929
Interstate (by land)—					*Interstate (by land)—*				
New South Wales	4,278		36,265		New South Wales ..	15,209		92,588	
Northern Territory	800		3,631		Northern Territory	791		3,163	
South Australia ..	..		..		South Australia ..	40		160	
		5,078		39,896			16,040		95,911
Totals ..		5,078		39,896	Totals		18,270		132,840

Table No. 9.

RETURN FOR TEN YEARS SHOWING THE NUMBER OF ENTIRE AND OTHER HORSES.

At 31st December.	Entire Horses.	Other Horses.	Total.
1928	1,750	520,740	522,490
1929	1,700	498,404	500,104
1930	1,805	479,810	481,615
1931	2,221	467,253	469,474
1932	2,147	450,339	452,486
1933	2,389	447,635	450,024
1934	2,358	446,246	448,604
1935	2,534	439,379	441,913
1936	2,741	438,795	441,536
1937	3,048	443,729	446,777

Table No. 10.

RETURN FOR TEN YEARS SHOWING THE NUMBER OF OWNERS AND THE SIZES OF HERDS UNDER VARIOUS GROUPINGS, ALSO THE CENTESIMAL INCREASE OR DECREASE FOR THE YEAR 1937.

For Details of Sizes of Herds of Cattle in Pastoral Districts, for the Year 1937, see Table No. 37.

At 31st December.	1 to 99.		100 to 199.		200 to 299.		300 to 499.		500 to 999.	
	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.
1928 ..	37,501	1,086,823	4,017	662,848	*	*	787	309,195	637	451,767
1929 ..	37,376	1,113,944	4,359	713,674	*	*	841	326,676	633	447,727
1930 ..	37,590	1,153,767	4,709	768,192	*	*	867	338,439	652	458,244
1931 ..	38,715	1,219,244	5,006	822,241	*	*	889	346,963	679	477,297
1932 ..	39,805	1,254,112	4,978	812,966	*	*	856	330,355	708	495,940
1933 ..	40,064	1,297,024	3,969	554,522	1,126	280,329	878	343,673	718	510,694
1934 ..	40,204	1,332,945	4,195	587,156	1,195	296,263	921	358,358	771	544,854
1935 ..	40,138	1,323,624	4,216	590,976	1,229	304,823	921	358,926	800	563,413
1936 ..	40,637	1,263,110	3,998	541,017	1,152	276,873	909	344,940	826	567,691
1937 ..	40,739	1,244,926	3,968	536,611	1,088	261,513	954	360,027	781	539,072

At 31st December.	1,000 to 4,999.		5,000 to 9,999.		10,000 and Upwards.		Totals.		Average Size of Herds.
	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	
1928	589	1,238,377	93	643,522	40	735,809	43,667	5,128,341	117
1929	601	1,256,436	106	729,907	43	620,224	43,953	5,208,588	119
1930	640	1,330,754	98	658,532	37	755,796	44,602	5,463,724	122
1931	617	1,286,905	105	704,694	46	693,055	46,051	5,550,399	121
1932	611	1,286,119	101	708,518	40	647,055	47,096	5,535,065	118
1933	645	1,321,670	108	766,659	37	706,599	47,549	5,781,170	122
1934	666	1,375,325	111	795,913	41	761,827	48,110	6,052,641	126
1935	682	1,379,209	113	795,503	47	716,530	48,142	6,033,004	125
1936	658	1,340,831	113	799,493	43	816,617	48,341	5,950,572	123
1937	683	1,365,814	117	792,188	51	858,969	48,381	5,959,165	123
Increase per cent., 1937 on 1936							0.08	0·14	..

* Included in Group 100 to 199.

Table No. 11.

RETURN FOR TEN YEARS SHOWING THE NUMBER OF OWNERS AND THE SIZES OF FLOCKS UNDER VARIOUS GROUPINGS ALSO THE CENTESIMAL INCREASE OR DECREASE FOR THE YEAR 1937.

For Details of Sizes of Flocks of Sheep in Pastoral Districts, for the Year 1937, see Table No. 39.

At 31st December.	1 to 499.		500 to 999.		1,000 to 1,999.		2,000 to 4,999.		5,000 to 9,999.	
	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.
1928 ..	1,948	270,670	548	411,937	758	1,129,591	1,095	3,637,181	553	3,830,572
1929 ..	1,913	252,107	548	415,464	766	1,148,611	1,234	4,088,974	662	4,560,694
1930 ..	1,944	245,755	520	398,080	673	1,006,284	1,214	4,078,142	734	5,053,772
1931 ..	1,911	227,967	526	401,406	677	1,002,776	1,231	4,179,403	772	5,348,174
1932 ..	1,788	214,150	551	415,076	679	1,026,160	1,250	4,262,626	767	5,341,945
1933 ..	1,705	212,286	527	392,199	710	1,087,876	1,243	4,217,809	787	5,442,649
1934 ..	1,587	195,446	518	391,620	698	1,055,507	1,371	4,714,367	770	5,343,165
1935 ..	1,730	224,230	635	487,052	750	1,130,779	1,446	4,839,661	613	4,225,195
1936 ..	1,581	191,727	493	361,321	712	1,022,427	1,385	4,570,327	741	5,013,343
1937 ..	1,432	171,944	511	373,979	737	1,065,362	1,426	4,741,090	911	6,224,073

At 31st December.	10,000 to 19,999.		20,000 to 49,999.		50,000 to 99,999.		100,000 and Upwards.		Totals.		Average Size of Flocks.
	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	
1928 ..	279	3,899,803	113	3,399,575	24	1,570,488	3	359,384	5,321	18,509,201	3,479
1929 ..	286	4,021,226	127	3,791,241	25	1,570,079	4	475,907	5,565	20,324,303	3,652
1930 ..	313	4,356,680	158	3,635,047	33	2,261,447	4	506,836	5,593	22,542.043	4,030
1931 ..	303	4,144,829	153	4,445,418	35	2,302,423	2	271,882	5,610	22,324.278	3,979
1932 ..	302	4,132,447	109	4,329,982	35	2,323,938	2	266,541	5,483	21,312,865	3,887
1933 ..	273	3,766,895	113	3,338,748	23	1,490,490	1	123,852	5,382	20,072,804	3,730
1934 ..	302	4,128,259	126	3,742,267	29	1,882,996	1	120.555	5,402	21,574,182	3,994
1935 ..	246	3,378,764	101	3,926,491	11	710,121	1	137,800	5,533	18,060,093	3,264
1936 ..	297	3,994,514	124	2,710,511	15	1,004,952	1	142,627	5,349	20,011,749	3,741
1937 ..	320	4,331,191	139	4,057,170	21	1,355,391	1	177,770	5,498	22,497,970	4,092
Increase per cent., 1937 on 1936	..	..	..	..	..	..	..	..	2·79	12·42	..

Table No. 12.

RETURN FOR TEN YEARS SHOWING THE RESULTS OF LAMBING, LOSSES, ETC., IN THE STATE.

For Details for the Year 1937, see Tables No. 51 and 52.

—	1928.	1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.	1937.
al Sheep on 1st January	16,642,385	18,509,201	20,324,303	22,542,043	22,324,278	21,312,865	20,072,804	21,574,182	18,060,093	20,011,749
es mated with Rams ..	7,820,137	8,114,502	9,158,966	9,107,493	8,877,345	7,526,979	9,454,686	6,843,471	8,405,084	*
nbs Marked	3,995,065	4,257,250	5,625,924	5,013,286	4,243,356	3,336,321	4,979,373	2,115,883	4,831.815	*
rcentage of Lambing ..	51·09	52·46	61·43	55·05	47·80	44·32	52·67	30·92	57·49	*
rchases and Transfers ..	5,095,420	4,332,101	3,334,721	3,109,122	3,076,159	4,447,856	3,602,919	4,239,105	3,474,944	*
es and Transfers ..	5,331,870	4,693,815	4,642,376	5,621,848	5,141,507	5,821,505	4,777,149	5,126,264	4,543,813	*
sses	1,693,954	1,851,105	1,840,943	2,449,784	2,920,545	2,935,089	2,042,567	4,488,006	1,574,393	*
led for Food on Holding	197,845	229,329	259,586	268,541	268,876	267,644	261,198	254,807	236,897	254,875
tal Sheep on 31st December	18,509,201	20,324,303	22,542,043	22,324,278	21,312,865	20,072,804	21,574,182	18,060,093	20,011,749	22,497,970
ns obtained	205,797†	208,162†	219,347†	206,204†	139,674†	159,351†	182,856†	172,583†	152,752‡	*

* Not yet available. † Year ended 30th June. ‡ Calendar year.

Table No. 13.

RETURN FOR TWO YEARS SHOWING THE NUMBER OF CATTLE, ETC., EXPORTED AND NUMBER KILLED FOR EXPORT OR FOR HOME CONSUMPTION.

YEAR ENDED 31ST DECEMBER.	Cattle and Calves.		Sheep and Lambs.		Pigs.	
	1936.	1937.	1936.	1937.	1936.	1937.
Exported, less number imported alive oversea	74	85	78	196	5	1
Exported, less number imported alive overland	144,797	89,454	394,542	– 183,985	– 3,905	– 2,490
Number killed for export (meatworks, bacon factories, and abattoir)	538,560	562,550	166,571	144,449	143,456	121,675
Number killed for home consumption (meatworks, bacon factories, abattoir, slaughterhouses, stations, and farms)	*472,559	*556,309	*877,173	*923,635	*430,525	*370,157
Total	1,155,990	1,208,398	1,438,364	884,295	570,081	489,343

* Includes condemned: —	1936.	1937.
Cattle	15,103	18,879
Sheep	1,468	1,634
Pigs	5,953	5,009

Table No. 14.

Return for Ten Years showing the Number of Horses, Cattle, Sheep, and Pigs Imported into and Exported from the State Overland and Oversea.

Year.		Horses.		Cattle.		Sheep.		Pigs.	
		Inward.	Outward.	Inward.	Outward.	Inward.	Outward.	Inward.	Outward.
		Number.	Number.	Number.	Number.	Number.	Number.	Number.	Number
1928	Overland, Jan. to June ..	3,804	6,364	4,129	264,225	422,589	351,990	†	†
	Overland, July to Dec. ..	3,277	5,203	5,145	101,877	328,665	317,304	126	3,174
	Oversea, Jan. to June ..	5	2,137	..	18	..	54	..	24
	Oversea, July to Dec. ..								42
1929	Overland, Jan. to June ..	23,561	6,232	51,614	85,028	394,970	220,978	143	4,287
	Overland, July to Dec. ..	4,904	7,682	34,049	95,550	233,915	314,820	134	12,244
	Oversea, Jan. to June ..	..	2,906	..	21	..	316	..	7
	Oversea, July to Dec. ..								20
1930	Overland, Jan. to June ..	5,271	8,579	66,092	84,111	397,616	346,064	201	7,373
	Overland, July to Dec. ..	9,470	10,460	34,709	142,702	215,204	543,794	595	3,751
	Oversea, Jan. to June ..	..	2,492	13	25	..	344	..	3
	Oversea, July to Dec. ..								5
1931	Overland, Jan. to June ..	4,974	8,212	28,147	122,681	156,266	382,188	627	3,497
	Overland, July to Dec. ..	6,783	11,819	24,226	134,406	121,501	812,607	694	1,488
	Oversea, Jan. to June ..	1	147	10	..	..	170	..	..
	Oversea, July to Dec. ..	..	1,822	..	13	..	310	..	8
1932	Overland, Jan. to June ..	5,368	11,017	13,595	128,879	118,561	537,096	779	2,792
	Overland, July to Dec. ..	5,925	11,666	17,430	111,451	171,706	566,031	903	591
*	Oversea, Jan. to June ..	..	2	..	4	..	260	..	..
	Oversea, July to Dec. ..	1	942	..	13	..	..	..	..
1933	Overland, Jan. to June ..	6,160	7,828	21,442	61,104	264,519	172,063	792	1,431
	Overland, July to Dec. ..	5,789	8,925	24,700	127,664	209,042	318,852	476	391
	Oversea, Jan. to June ..	1	8	2	1	..	41	1	3
	Oversea, July to Dec. ..	..	1,820	..	29	..	106	2	1
1934	Overland, Jan. to June ..	5,024	10,237	48,082	160,492	177,227	273,279	1,314	792
	Overland, July to Dec. ..	4,108	9,915	17,465	118,526	165,664	312,246	1,135	381
	Oversea, Jan. to June ..	..	6	2	13	..	98	..	3
	Oversea, July to Dec. ..	..	2,323	..	37	..	44	..	..
1935	Overland, Jan. to June ..	3,289	8,399	22,101	56,259	161,757	350,842	803	485
	Overland, July to Dec. ..	3,152	6,952	27,883	41,463	284,626	231,395	1,006	771
	Oversea, Jan. to June ..	..	110	12	18	..	24	3	2
	Oversea, July to Dec. ..	3	2,371	..	47	..	21	6	2
1936	Overland, Jan. to June ..	3,609	8,851	51,649	107,482	201,611	397,332	2,493	912
	Overland, July to Dec. ..	2,629	8,667	41,785	130,749	217,171	415,992	3,678	1,354
	Oversea, Jan. to June ..	..	3	3	21	..	10	..	..
	Oversea, July to Dec. ..	2	2,353	..	56	..	68	..	5
1937	Overland, Jan. to June ..	2,185	8,459	39,849	64,094	448,144	296,212	3,782	892
	Overland, July to Dec. ..	2,893	7,581	31,674	96,883	347,007	314,954	2,131	2,531
	Oversea, Jan. to June ..	..	243	5	41	..	104	..	..
	Oversea, July to Dec. ..	..	1,987	1	50	..	92	6	7
1938	Overland, Jan. to June ..	3,992	6,216	58,909	53,686	398,006	226,166	4,880	1,380
	Oversea, Jan. to June ..	..	43	15	24	..	34	2	6

† Not available.

* Interstate coastwise traffic for the six months ended 30th June, 1932, was as follows:—Inward—Horses 47, Value £3,913; Cattle 17, Value £827; Sheep 6, Value £240; Pigs 2, Value £50. Outward—Nil.

Table No. 15.

Return of Live Stock and Wool crossing the Queensland Borders during the Year ended 31st December, 1937.

—	Horses.		Cattle.		Sheep.		Pigs.		Wool.	
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Bales.	*Value.
		£		£		£		£	No.	£
INWARD.										
From—										
New South Wales ..	4,278	36,265	39,736	144,500	795,151	966,614	5,913	12,315	5,643	108,064
Northern Territory ..	800	3,631	31,087	116,044	..	..	..	..	..	..
South Australia ..	..	..	700	7,000	..	..	..	..	..	..
Total	5,078	39,896	71,523	267,544	795,151	966,614	5,913	12,315	5,643	108,064
OUTWARD.										
To—										
New South Wales ..	15,209	92,588	136,187	598,804	611,166	549,675	3,423	5,975	7,869	155,591
Northern Territory ..	791	3,163	2,995	9,020	..	..	..	..	..	..
South Australia ..	40	160	21,795	130,904	..	..	..	..	(a) 318	7,321
Total	16,040	95,911	160,977	738,728	611,166	549,675	3,423	5,975	(a)8,187	162,912

* Based on Brisbane Market Value.

(a) Including 66 bales of scoured wool.

Table No. 16.

RETURN SHOWING THE NUMBER, &c., OF BACON-CURING AND MEAT PRESERVING WORKS FOR THE YEAR ENDED 30TH JUNE, 1937, AND INCREASE OR DECREASE ON PREVIOUS YEAR.

Kind of Establishment.	Number.	Number of Workers Employed. (*a*)	Value of Machinery and Plant.	Value of Land and Buildings.	Value of Output.
			£	£	£
Bacon Curing	10	677	117,472	221,840	1,316,926
Meat Preserving (*b*)	12	2,477	744,316	1,261,566	5,808,846
Total, 1936–37 (*b*) ..	22	3,154	861,788	1,483,406	7,125,772
Total, 1935–36 (*b*) ..	20	2,574	776,823	1,438,192	5,554,980
Increase, 1936–37 ..	2	580	84,965	45,214	1,570,792
Decrease, 1936–37 ..	..	..	..	..	..

(*a*) Average over whole year.
(*b*) Including Rabbit Freezing works.

Table No. 17.

RETURN SHOWING NUMBER OF PIGS SLAUGHTERED IN THE SEVERAL PETTY SESSIONS DISTRICTS OF THE STATE, TOGETHER WITH THE PRODUCTION OF PORK, BACON, AND HAM, FOR THE YEAR 1936–37.

Petty Sessions District.	Pigs Slaughtered	Fresh and Salt Pork.	Bacon and Ham.
	Number.	Lb.	Lb.
Atherton ..	1,666	134,216	1,898
Beaudesert	908	54,648	1,772
Bowen ..	672	49,659	70
Brisbane	362,644	13,843,961	13,799,758
Bundaberg	2,986	264,206	5,116
Dalby ..	752	52,448	5,061
Dugandan	797	57,069	2,476
Gayndah ..	618	33,800	5,017
Gladstone	4,601	469,922	3.687
Gympie ..	2,362	196,661	7,319
Laidley ..	663	44,237	4,209
Logan ..	783	59,753	8,303
Mackay ..	3,811	282,466	1,281
Mareeba ..	11,226	44,800	773,554
Maryborough	9,783	168,073	737,124
Nanango	1,641	67,116	64,190
Oakey ..	625	59,932	11,227
Pittsworth	837	62,675	3,681
Rockhampton	21,273	1,613,098	340,646
Roma ..	760	67,055	1,659
Southport	851	65,842	2,580
Stanthorpe	585	53,599	5,884
Toogoolawah	296	21,636	846
Toowoomba	61,172	375,328	4,039,645
Townsville	2,130	180,140	..
Warwick	5,368	102,030	335,125
Wienholt	1,353	106,075	7,307
All Other Districts	27,536	1,979,447	60,293
Total, State	528,699	20,509,892	20,229,728
Total on Farms	8,504	499,535	227,539
Total in Factories	458,018	14,963,011	20,002,189
Total in Slaughter-houses	62,177	5,047,346	..
Total, State	*528,699	20,509,892	20,229,728

* Including 5,804 Pigs slaughtered but subsequently condemned.

Figures in this table are for Financial year, therefore do not agree with those in Tables No. 13 and No. 42 which refer to calendar year.

Table No. 18.

RETURN FOR TEN YEARS SHOWING THE QUANTITY AND CONDITION OF WOOL SOLD IN THE BRISBANE MARKET AND THE AMOUNT REALISED.

Year ended 30th June.	No. of sales.	Greasy Wool.			Scoured Wool.			Total Greasy and Scoured Wool.		
		No. of bales.	Weight in lb.	Amount Realised.	No. of bales.	Weight in lb.	Amount Realised.	No. of bales.	Weight in lb.	Amount Realised.
				£			£			£
1929	8	346,259	113,454,571	7,410,209	30,002	6,201,171	770,577	376,261	119,655,742	8,180,783
1930	10	377,730	122,773,424	5,247,977	33,103	6,744,969	517,696	410,833	129,518,393	5,765,673
1931	10	427,167	139,749,813	5,403,678	29,872	6,171,041	354,427	457,039	145,920,854	5,758,105
1932	11	408,417	131,610,148	4,242,897	37,660	7,691,122	407,395	446,077	139,301,270	4,650,292
1933	10	436,385	141,636,469	5,596,119	64,137	13,387,762	907,239	500,522	155,024,231	6,503,358
1934	7	302,938	97,302,028	6,289,245	50,098	10,469,300	1,164,405	353,036	107,771,328	7,453,650
1935	13	490,804	156,152,802	6,755,127	60,135	12,149,794	941,127	550,939	168,302,596	7,696,254
1936	8	347,486	108,530,704	6,301,535	39,084	8,014,633	758,994	386,570	116,545,337	7,060,529
1937	10	456,324	143,867,941	9,895,743	35,942	7,227,028	795,135	492,266	151,094,969	10,690,878
1938	11	451,353	141,849,963	7,081,283	32,208	6,423,510	544,773	483,561	148,273,473	7,626,056

Table No. 19.

RETURN FOR TEN YEARS SHOWING THE AVERAGE PRICE PER LB. REALISED AT THE BRISBANE WOOL SALES.

Year ended 30th June.	1929.	1930.	1931.	1932	1933.	1934.	1935.	1936.	1937.	1938.
	d.	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*
Greasy wool ..	15·68	10·26	9·28	7·74	9·48	15·51	10·38	13·93	16·51	11·98
Scoured wool ..	29·82	18·42	13·78	12·71	16·26	26·69	18·59	22·73	26·41	20·35

Table No. 20.

WOOL.

RETURN FOR TEN YEARS SHOWING THE NUMBER OF SHEEP SHORN AND THE WOOL PRODUCED IN QUEENSLAND

For details for the year ended 31st December, 1936, see Tables No. 45, 46, and 47.

Production of Wool.	1927-28.	1928-29.	1929-30.	1930-.31.	1931-32.
Number of sheep shorn	16,961,698	18,438,630	20,733,054	22,778,181	23,183,705
Result off shears only, lb. net—					
Greasy wool	110,611,493	121,219,173	138,030,120	158,468,047	156,199,991
Scoured wool	6,085,234	6,234,550	8,278,574	7,445,725	9,204,320
*Above expressed as Greasy	122,781,961	134,727,365	155,967,030	174,600,451	176,142,684
Average weight, lb.—					
Per Greasy bale	335	333	333	333	327
Per Scoured bale	217	217	222	215	207
Per Fleece in the Grease	7·24	7·31	7·52	7·67	7·60
Total wool production (Greasy), including quantity fellmongered, exported on skins, and utilised, lb.	**126,429,938**	**138,988,930**	**‡161,087,873**	**‡182,061,407**	**‡184,716,462**
† Estimated value of production	£10,077,519	£9,080,611	£6,886,506	£7,039,708	£5,957,105

Production of Wool.	1932-33.	1933-34.	1934-35.	1935-36.	1936.
Number of sheep shorn	22,407,859	20,776,320	22,609,717	18,764,417	18,471,448
Result off Shears only, lb. net—					
Greasy wool	146,708,631	137,326,080	142,036,522	122,776,544	131,910,472
Scoured wool	12,449,333	10,868,347	11,269,052	6,515,581	6,890,524
*Above expressed as Greasy	137,682,186	160,874,165	166,452,800	136,893,636	146,839,941
Average weight, lb.—					
Per Greasy bale	329	328	321	320	322
Per Scoured bale	207	211	208	211	215
§ Per Fleece in the Grease	7·75	7·74	7·36	7·30	7·95
Total wool production (Greasy), including quantity fellmongered, exported on skins, and utilised, lb.	‡185,833,546	‡169,989,516	‡174,088,413	‡142,793,328	‡153,766,368
† Estimated value of production	£7,340,425	£10,227,703	£7,587,353	£8,287,96	£9,155,506

* From 1st July, 1928, scoured wool has been converted into the estimated greasy equivalent on the assumption that 1 lb. scoured wool is produced from 2½ lb. greasy. In previous years a ratio of 1 to 2 was used.

† Based on average prices realised at Brisbane Wool Sales.

‡ Including dead wool (not previously collected).

§ Including lambs, weaners and hoggets, which amounted to 15·7 per cent. of the sheep shorn in 1936.

Table No. 21.

RETURN FOR TEN YEARS SHOWING THE AVERAGE OVERSEA EXPORT VALUE PER LB. OF WOOL FROM QUEENSLAND.

Year ended 30th June.	1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.	1937.	1938.
	d.	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*
Greasy wool	17·17	11·60	9·86	8·61	9·01	15·11	10·53	14·44	16·81	13·95
Scoured wool .	31·44	22·34	14·76	13·45	14·73	24·10	18·22	21·22	24·52	22·89

Table No. 22.

RETURN FOR TEN YEARS SHOWING THE QUANTITY AND VALUE OF WOOL AND WOOLLED SKINS EXPORTED OVERSEA FROM QUEENSLAND.

Year ended 30th June.	Greasy.		Scoured.		Woolled Skins.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Lb.	£	Lb.	£	Lb.	£
1929	115,370,996	8,256,965	11,785,858	1,544,164	4,287,380	221,428
1930	122,023,953	5,898,865	10,911,832	1,015,954	5,720,343	177,406
1931	146,129,752	6,005,219	10,890,695	669,823	5,758,382	112,783
1932	149,541,226	5,367,646	14,198,049	795,779	5,018,095	77,968
1933	142,716,884	5,359,620	17,193,918	1,055,563	4,112,509	67,419
1934	128,534,115	8,094,432	18,716,446	1,879,241	2,934,525	84,241
1935	137,837,068	6,047,655	17,424,690	1,322,716	3,042,533	66,529
1936	109,839,914	6,603,031	14,334,775	1,267,637	2,076,107	68,150
1937	129,103,867	9,040,128	11,060,586	1,130,124	2,806,137	116,084
1938	142,782,644	8,297,012	11,479,889	1,094,768	3,860,509	131,765

Table No. 23.

RETURN FOR TEN YEARS SHOWING THE AMOUNT OF SCOURED WOOL USED IN MANUFACTURE.

—	1928-29.	1929-30.	1930-31.	1931-32	1932-33.	1933-34.	1934-35.	1935-36.	1936-37.	1937-38.
	Lb.	Lb.	Lb.	Lb.	Ln.	Lb.	Lb.	Lb.	Lb.	Lb.
Quantity of Scoured Wool used in Manufacture ..	477,008	572,237	440,756	541,451	794,559	796,547	682,367	650,142	713,536	733,388

Table No. 24.

RETURN FOR TWO YEARS SHOWING THE EXPORT **Oversea** OF HOME PRODUCE.

Value of—	1936-37.		1937-38.	
	Home Produce only.		Home Produce only.	
	Total Exports.	Percentage to Total Exports.	Total Exports.	Percentage to Total Exports.
	£		£	
Agricultural and Dairy Products	6,571,572	28·64	9,413,442	35·60
*Pastoral	13,720,201	59·79	14,107,131	53·35
Mineral	2,114,857	9·22	2,634,908	9·96
Other	540,076	2·35	288,026	1·09
Total	22,946,706	100·00	26,443,507	100·00

* Exclusive of Furred Skins :—1936–37, £344,716 ; 1937–38, £44,511.

Table No. 25

RETURN FOR TWO YEARS SHOWING THE DETAILS OF PASTORAL PRODUCTS EXPORTED **Oversea.**

Value of—	1936-37.	1937-38.	Increase or — Decrease, 1937-38
	Home Produce only.		
	Exports Oversea.	Exports Oversea.	
	£	£	£
Pastoral Products—			
Wool	10,170,252	9,391,780	—778,472
Live Stock (Horses, Cattle, and Sheep)	44,162	33,755	—10,407
*Meat (all kinds, including Extract)	2,937,143	4,050,845	1,113,702
Tallow	156,919	160,920	4,001
†Hides and Skins	367,363	412,743	45,380
Leather	15,128	19,617	4,489
All Other	29,234	37,471	8,237
Total	13,720,201	14,107,131	386,930

* Exclusive of Bacon, Ham, Pork and Poultry, these being treated as products of Agriculture and Dairying—1936–37, £333,118 ; 1937–38, £508,156.

† Exclusive of Furred Skins—1936–37, £344,716 ; 1937–38, £44,511.

Table No. 26.

RETURN FOR TEN YEARS SHOWING THE NUMBER OF COMMON GOATS IN THE STATE AND THE NUMBER KILLED FOR FOOD, &C.

Year ended 31st December—	Number Depastured at end of Year.	Number Killed for Food.	Dead Weight: Lb.	Average Dead Weight: Lb.	Number of Skins Sold or Utilised.
1928	85,622	14,888	417,305	28·03	9,261
1929	82,360	14,983	434,380	28·99	9,581
1930	69,460	11,195	307,177	27·44	6,169
1931	73,739	14,483	375,872	25·95	6,632
1932	76,986	15,175	421,016	27·74	6,057
1933	81,768	16,973	479,312	28·24	8,082
1934	79,333	12,670	325,719	25·71	5,380
1935	75,063	11,359	321,926	28·34	2,807
1936	*81,407	12,379	372,008	30·05	†3,883
1937	*n*	*n*	*n*	*n*	*n*

* Including 299 Saanen Goats. † Value of Skins, £271. *n* Not available.

Table No. 27.

RETURN FOR TEN YEARS SHOWING THE NUMBER OF ANGORA GOATS IN THE STATE AND THE NUMBER KILLED FOR FOOD, MOHAIR, OBTAINED, &C.

Year ended 31st December—	Number Depastured at end of Year.	Mohair Sold or Utilised.	Number Killed for Food.	Dead Weight: Lb.	Average Dead Weight: Lb.	Number of Skins Sold or Utilised.
		Lb.				
1928	2,938	2,137	673	19,429	28·87	648
1929	2,215	1,425	467	14,127	30·25	360
1930	1,840	1,288	276	8,034	29·11	310
1931	1,683	972	205	5,955	29·05	145
1932	1,516	756	227	6,633	29·22	166
1933	1,375	444	178	5,195	29·19	106
1934	1,089	267	147	4,202	28·59	98
1935	1,179	192	151	3,970	26·29	88
1936	940	*207	96	2,915	30·37	†21
1937	*n*	*n*	*n*	*n*	*n*	*n*

* Value of Mohair, £5. † Value of Skins, £2. *n* Not available.

Table No. 28.

RETURN FOR TEN YEARS SHOWING THE NUMBER OF CAMELS, DONKEYS, AND MULES IN THE STATE, TOGETHER WITH THE CENTESIMAL INCREASE OR DECREASE.

Year ended 31st December.	Number of Camels.	Increase or Decrease.	Number of Donkeys.	Increase or Decrease.	Number of Mules.	Increase or Decrease.
		%		%		%
1928	466	5·91	25	8·70	980	9·13
1929	354	— 24·03	30	20·00	972	— 0·82
1930	215	— 39·27	18	— 40·00	627	— 35·49
1931	433	101·40	33	83·33	838	33·65
1932	502	15·94	44	33·33	798	— 4·77
1933	702	39·84	91	106·82	1,015	27·19
1934	614	— 12·54	42	— 53·85	758	— 25·32
1935	453	— 26·22	64	52·38	774	2·11
1936	324	— 28·48	30	— 53·13	938	21·19
1937	*n*	*n*	52	73·33	809	— 13·75

— Decrease. *n* Not available.

Table No. 29.

RETURN FOR TEN YEARS SHOWING THE NUMBER OF CALVES RETURNED AS BRANDED AND THE CENTESIMAL INCREASE OR DECREASE. *For details for* 1936 *see Table* 31.

Year ended 31st December.	Male.	Increase or Decrease.	Female.	Increase or Decrease.	Total.	Increase or Decrease.
		%		%		%
1928	468,581	25·01	520,986	23·80	989,567	24·37
1929	468,006	— 0·12	528,548	1·45	996,554	0·71
1930	506,434	8·21	565,408	6·97	1,071,842	7·55
1931	489,148	— 3·41	559,251	— 1·09	1,048,399	— 2·19
1932	449,537	— 8·10	534,252	— 4·47	983,789	— 6·16
1933	488,928	8·76	572,843	7·22	1,061,771	7·93
1934	560,511	14·64	643,368	12·31	1,203,879	13·38
1935	501,533	— 10·52	594,058	— 7·66	1,095,591	— 8·99
1936	506,362	0·96	581,362	— 2·14	1,087,724	— 0·72
1937	519,008	2·50	593,815	2·14	1,112,823	2·31

— Decrease.

Table No. 30.

RETURN SHOWING THE AREA OF THE VARIOUS PETTY SESSIONS DISTRICTS OF THE STATE, THE NUMBER OF HORSES, CATTLE, SHEEP AND PIGS THEREIN, AND THE INCREASE OR DECREASE OF CATTLE AND SHEEP ON 31ST DECEMBER, 1937.

Sessions District.	Area in sq. Miles.	Horses.	Cattle.				Sheep.				Pigs.
		1937.	1936.	1937	1937. Increase.	1937. Decrease.	1936.	1937.	1937. Increase.	1937. Decrease.	1937.
le	4,419	895	8,823	5,890	..	2,933	213,912	203,442	..	10,470	..
..	324	3,404	13,377	12,017	..	1,360	6,821	8,182	1,361	..	3,262
..	7,983	4,105	51,047	58,262	7,215	..	151,912	216,496	64,584	..	114
ac	6,757	1,890	4,092	4,541	449	..	503,539	559,194	55,655	..	1
ton	682	4,024	45,338	44,172	..	1,166	435	451	16	..	9,344
hella	5,264	2,215	31,210	26,561	..	4,649	270,856	273,551	2,695	..	50
..	2,103	7,144	36,650	35,385	..	1,265	197	294	97	..	812
na	1,875	2,007	59,057	57,711	..	1,346	7,209	16,551	9,342	..	56
ldine	3,862	1,719	3,921	3,925	4	..	508,512	520,990	12,478	..	240
lesert	968	4,428	70,503	70,305	..	198	1,163	1,284	121	..	14,206
nden	653	2,560	42,388	42,026	..	362	185	189	4	..	3,541
all	8,297	2,721	7,132	6,012	..	1,120	744,817	886,779	141,962	..	69
n	5,987	1,849	8,869	9,875	1,006	..	446,867	533,105	86,238	..	25
a	21,027	2,165	48,332	33,743	..	14,589	195,703	205,002	9,299	..	19
n	1,900	3,829	28,111	28,395	284	..	5	12	7	..	250
ane	549	3,750	22,468	21,627	..	841	48	77	29	..	2,048
aberg	1,460	6,174	61,736	61,741	5	..	1,937	455	..	1,482	1,822
e	18,228	2,555	74,595	80,023	5,428	..	24,713	24,548	..	165	2
lture	304	869	9,599	9,567	..	32	231	447	216	..	861
s	842	2,967	5,595	5,492	..	103	33	49	16	..	556
oweal	10,246	2,310	70,987	78,843	7,856	..	18,720	20,015	1,295	..	109
River	8,083	5,017	95,887	105,069	9,182	..	408	418	10	..	83
vell	1,057	2,175	8,055	10,017	1,962	..	..	2	2	..	141
eville	9,023	3,678	20,550	18,967	..	1,592	878,074	969,864	91,790	..	86
ers Towers	9,921	9,454	194,257	193,765	..	492	766	732	..	34	905
ers	647	1,855	14,934	14,850	..	84	..	..	..	..	285
goe	8,667	2,195	30,195	28,004	..	2,191	..	..	..	..	14
hilla	2,311	4,169	58,984	58,970	..	14	37,036	44,496	7,460	..	3,559
ont	15,011	8,878	137,127	145,668	8,541	..	621,256	582,791	..	38,465	308
land	200	535	1,277	1,282	5	..	..	..	..	..	238
n	408	5,376	19,686	18,042	..	1,644	22,510	23,984	1,465	..	5,404
urry	39,468	11,004	204,169	222,105	17,936	..	790,282	966,185	175,903	..	159
..	25,396	2,086	31,937	28,477	..	3,460	..	..	..	..	..
sville	6,310	3,689	150,353	152,729	2,376	..	72	78	6	..	122
amine	3,592	3,936	71,176	71,114	..	62	70,295	106,963	36,668	..	900
..	23,921	3,679	84,174	81,732	..	2,442	..	..	..	..	80
's Nest	365	2,809	26,111	25,092	..	1,019	20	42	22	..	8,261
ion	6,880	1,569	24,774	26,541	1,767	..	..	..	..	..	18
amulla	13,557	3,726	18,548	13,256	..	5,292	1,257,463	1,225,057	..	32,406	94
y	6,797	9,953	130,907	124,642	..	6,265	624,824	768,549	143,725	..	9,859
antina	22,684	1,152	36,890	32,895	..	3,995	..	1	1	..	.
nbandi	4,715	2,444	10,948	10,442	..	506	767,369	932,262	164,893	..	26
las	787	1,462	4,025	4,230	205	..	..	..	..	..	177
ndan	522	4,421	39,177	37,890	..	1,287	93	132	39	..	10,923
rold	2,383	2,637	59,874	56,803	..	3,071	314	326	12	..	1,527
ald	4,731	3,297	55,768	60,816	5,048	..	291,952	290,285	..	1,667	218
..	563	1,796	27,976	26,820	..	1,156	1,710	2,613	903	..	2,585
ridge	19,640	8,233	195,937	198,751	2,814	..	..	..	..	..	141
..	5,476	1,022	6,360	5,181	..	1,179	328,626	277,005	..	51,621	2
on	504	3,738	24,014	22,996	..	1,018	353	723	370	..	5,450
dah	3,727	6,080	125,723	125,446	..	277	293	167	..	126	8,054
Gin	1,056	3,329	57,519	59,012	1,493	..	214	235	21	..	788
stone	3,457	6,426	155,134	150,742	..	4,392	2,137	2,005	..	132	2,773
diwindi	4,385	3,417	47,109	49,242	2,133	..	655,355	824,626	169,271	..	264
pie	1,634	5,946	122,657	120,800	..	1,857	521	446	..	75	17,765
isville	230	2,701	19,299	18,417	..	882	88	128	40	..	5,212
erton	5,345	4,248	74,375	70,421	..	3,954	65	164	99	..	750
enden	9,944	4,406	54,359	54,171	..	188	715,800	754,554	38,754	..	67
gerford	3,917	605	6,319	5,657	..	662	180,081	176,551	..	3,530	10
am	3,277	7,052	33,392	31,838	..	1,554	79	58	..	21	910
ewood	1,450	2,261	21,229	23,828	2,599	..	235,554	299,653	64,099	..	778
fail	572	3,284	5,278	5,411	133	..	..	..	..	..	148
ich	228	1,802	14,071	13,798	..	273	225	311	86	..	1,403
ord	7,929	1,918	4,425	4,573	148	..	489,720	533,716	43,996	..	40
Creek	10,647	3,193	45,586	53,580	7,994	..	386,623	509,688	123,065	..	40
lah	10,977	1,760	20,228	19,702	..	526	175,324	172,167	..	3,157	..
oy	305	1,136	16,915	16,026	..	889	74	88	14	..	3,334
ivan	333	1,204	20,443	21,216	773	..	105	60	..	45	1,331
arney	234	2,196	11,046	10,919	..	127	3,094	5,114	2,020	..	1,500
ley	222	3,005	15,401	15,356	..	45	51	48	..	3	3,666
an	239	1,819	14,550	15,027	477	..	198	163	..	35	2,874
greach	10,938	4,868	10,884	11,856	972	..	1,247,931	1,432,721	184,790	..	251
ood	208	1,811	14,358	13,377	..	981	..	..	..	..	3,358
kay	8,003	22,144	159,026	156,704	..	2,322	1,432	1,514	82	..	1,508
ourg	53	1,318	7,045	6,698	..	347	8	18	10	..	2,726
eeba	2,842	3,015	21,446	19,927	..	1,519	..	..	..	..	249
oochy	702	3,190	50,207	48,654	..	1,553	241	386	145	..	7,026
yborough	1,697	3,181	23,962	24,043	81	..	656	616	..	40	1,145
hell	10,387	5,876	71,198	80,163	8,965	..	589,659	686,138	96,479	..	187
to	1,773	4,457	69,740	74,263	4,523	..	2,480	2,186	..	294	6,850
nt Isa	1,395	443	1,822	2,165	343	..	..	..	..	..	13
nt Morgan	3,246	7,764	111,957	118,353	6,396	..	2,944	2,982	38	..	3,954
nt Perry	868	1,326	35,091	33,877	..	1,214	9	9	..	..	52
taburra	11,390	2,557	6,451	6,435	..	16	934,191	1,096,717	162,526	..	..
ango	1,679	10,026	108,302	99,898	..	8,404	2,022	1,442	..	580	19,069
man	25,570	5,937	201,913	197,863	..	4,050	5,143	10,862	5,719	..	5
ey	1,398	7,805	79,678	73,556	..	6,122	108,187	121,643	13,456	..	17,257
sworth	1,862	5,566	44,072	45,443	1,371	..	150,847	166,247	15,400	..	7,907
serpine	829	4,341	13,870	14,385	515	..	1,812	1,472	..	340	180
lpie	14,227	2,526	29,400	20,795	..	8,605	651,149	465,925	..	185,224	1

Table No. 30—*continued.*

RETURN SHOWING THE AREA OF THE VARIOUS PETTY SESSIONS DISTRICTS OF THE STATE, THE NUMBER OF HORSES, CATTLE, SHEEP, AND PIGS THEREIN AND THE INCREASE OR DECREASE OF CATTLE AND SHEEP ON 31ST DECEMBER, 1937.

Petty Sessions District.	Area in sq. Miles.	Horses.	Cattle.				Sheep.				Pigs.
					1937.				1937.		
		1937.	1936.	1937.	Increase.	Decrease.	1936.	1937.	Increase.	Decrease.	1937.
Ravenswood	1,152	1,038	18,405	19,705	1,300	..	..	..	..	..	2
Redcliffe	252	1,422	17,723	17,274	..	449	276	329	53	..	1,17
Richmond	13,354	5,085	54,661	59,115	4,454	..	784,388	1,009,563	225,175	..	..
Rockhampton	13,752	14,417	386,008	389,535	3,527	..	22,814	20,414	..	2,400	4,1
Roma	6,394	7,774	85,491	87,105	1,614	..	543,464	588,725	45,261	..	1,2
Rosewood	264	2,419	19,860	20,225	365	..	3,135	2,896	..	239	4,3
St. George	3,402	1,387	8,335	9,105	770	..	363,199	454,170	90,971	..	9
St. Lawrence	7,129	4,194	143,935	147,797	3,862	..	2,656	1,930	..	726	7
Somerset	4,586	218	1,173	1,042	..	131	..	..	..	..	3
Southport	502	2,055	38,264	38,298	34	..	541	674	133	..	6,0
Springsure	10,230	5,135	96,917	100,078	3,161	..	297,240	263,877	..	33,363	11
Stanthorpe	1,110	1,660	8,857	8,309	..	548	259,292	283,729	24,437	..	8
Surat	4,248	1,813	12,906	10,897	..	2,009	540,200	663,318	123,118	..	1
Tambo	5,553	1,897	17,988	18,260	272	..	449,325	530,673	81,348	..	
Taroom	5,448	3,361	82,404	91,465	9,061	..	21,032	32,156	11,124	..	1
Texas	530	1,204	10,496	10,454	..	42	125,649	136,145	10,496	..	44
Thargomindah	22,819	2,355	58,523	51,648	..	6,875	44,731	44,592	..	139	1
Tiaro	2,607	2,976	51,512	50,437	..	1,075	254	301	47	..	2,5
Toogoolawah	801	3,189	48,533	47,516	..	1,017	461	458	..	3	6,34
Toowoomba	543	7,819	39,132	35,023	..	4,109	4,936	10,461	5,525	..	8,42
Townsville	2,619	2,545	26,559	26,514	..	45	741	707	..	34	1,4
Warwick	1,358	7,532	41,610	40,340	..	1,270	215,316	255,512	40,196	..	4,2
Wienholt	2,345	10,349	133,425	133,666	241	..	475	583	108	..	26,5
Windorah	17,832	2,693	50,085	44,189	..	5,896	171,743	159,862	..	11,881	..
Winton	24,325	4,450	33,617	44,780	11,163	..	823,373	1,101,926	278,553	..	
Woodford	202	1,035	17,170	17,218	48	..	536	138	..	398	2,8
Wynnum	28	420	1,751	1,757	6	..	32	..	..	32	22
Yeulba	591	831	11,843	10,517	..	1,326	381	390	9	..	7
Total in State, 1937..	670,500	446,777	*5,959,165	..	..	..	22,497,970	..	..	..	282,9
Total in State, 1936..		441,913	†5,950,572	..	..	..	20,011,749	..	..	..	290,8
Increase .. 1937	..	5,241	..	..	8,593		..	.	2,486,221		..
Decrease .. 1937	..	..	..	..	..	..	..	..	..	..	7,91
Centesimal Increase 1937	..	1·19	..	..	0·14		..	..	12·42		..
Centesimal Decrease 1937	..	..	..	.	..	..	..	..	..	..	2·7

* Including 926,313 Dairy Cows.

† Including 879,418 Dairy Cows.

Table No. 31.

RETURN SHOWING NUMBER OF CALVES RETURNED AS BRANDED IN THE SEVERAL PETTY SESSIONS DISTRICTS OF THE STATE DURING THE YEARS 1936 AND 1937, THE CENTESIMAL INCREASE OR DECREASE, ALSO THE NUMBER OF CATTLE AND SHEEP KILLED FOR FARM OR STATION USE DURING THE LATTER YEAR.

Petty Sessions District.	Male.			Female.			Cattle Killed.	Sheep Killed
	1936.	1937.	Increase or Decrease.	1936.	1937.	Increase or Decrease.	1937.	1937.
Adavale	1,134	627	— 44·71	1,123	584	— 48·00	63	3,985
Allora	531	404	— 23·92	1,014	775	— 23·57	56	133
Alpha	4,527	6,522	44·07	4,448	6,507	46·29	381	1,937
Aramac	441	623	41·27	406	609	50·00	69	5,770
Atherton	286	305	6·64	2,694	2,602	— 3·41	51	1
Augathella	3,496	3,825	9·41	3,494	3,816	9·22	293	3,864
Ayr	2,331	2,424	3·99	2,402	2,433	1·29	21	..
Banana	5,938	5,795	— 2·41	5,902	5,921	0·32	341	31
Barcaldine	392	464	18·37	351	436	24·22	33	7,093
Beaudesert	1,495	1,151	— 23·01	4,593	4,107	— 10·58	75	34
Biggenden	1,485	1,531	3·10	3,438	3,285	— 4·45	132	14
Blackall	688	735	6·83	685	742	8·32	104	10,344
Bollon	800	916	14·50	747	915	22·49	312	8,218
Boulia	4,002	1,930	— 51·77	3,956	1,925	— 51·34	337	1,830
Bowen	2,764	3,054	10·49	2,787	3,110	11·59	119	..
Brisbane	81	68	— 16·05	1,235	879	— 28·83	6	..
Bundaberg	2,991	3,013	0·74	4,882	5,071	3·87	272	6
Burke	9,199	10,111	9·91	9,335	10,238	9·67	510	150
Caboolture	132	177	34·09	840	969	15·36	50	17
Cairns	220	187	— 15·00	297	293	— 1·35	40	..
Camooweal	9,338	11,307	21·09	9,649	11,625	20·48	439	80
Cape River	9,861	12,853	30·34	10,050	12,783	27·19	436	15
Cardwell	783	667	— 14·81	896	768	— 14·29	27	..
Charleville	1,207	1,499	24·19	1,226	1,579	28·79	403	13,710
Charters Towers	24,728	24,189	— 2·18	24,421	23,976	— 1·82	822	16
Childers	895	932	4·13	1,300	1,169	— 10·08	17	..
Chillagoe	3,426	3,023	— 11·76	3,299	3,137	— 4·91	235	..
Chinchilla	4,353	3,699	— 15·02	5,315	4,907	— 7·68	182	391
Clermont	14,007	19,971	42·58	13,640	19,791	45·10	1,044	7,503
Cleveland	3	4	33·33	53	62	16·98	..	..
Clifton	694	529	— 23·78	1,629	1,446	— 11·23	75	475
Cloncurry	29,618	36,080	21·82	29,809	35,613	19·47	1,347	6,226
Coen	4,110	3,365	— 18·13	4,243	3,344	— 21·19	222	..
Collinsville	16,629	17,328	4·20	16,643	17,328	4·12	695	..
Condamine	6,643	6,393	— 3·76	6,776	6,447	— 4·86	586	779
Cook	9,962	10,605	6·45	9,734	9,829	0·98	245	..
Crow's Nest	979	660	— 32·58	1,745	1,652	— 5·33	93	4
Croydon	3,227	3,652	13·17	3,063	3,672	19·88	149	..
Cunnamulla	1,700	1,441	— 15·24	1,872	1,340	— 28·42	112	16,371
Dalby	9,243	6,808	— 26·34	12,153	10,098	— 16·91	799	6,867
Diamantina	3,278	4,660	42·16	3,115	4,690	50·56	187	..
Dirranbandi	1,295	893	— 31·04	1,277	868	— 32·03	249	13,871
Douglas	168	171	1·79	294	269	— 8·50	19	..
Dugandan	1,118	997	— 10·82	2,683	2,182	— 18·67	48	14
Eidsvold	5,990	4,753	— 20·65	6,508	5,562	— 14·54	335	14
Emerald	6,522	7,852	20·39	6,407	7,714	20·40	227	3,238
Esk	2,059	974	— 52·70	1,426	1,378	— 3·37	37	62
Etheridge	25,672	25,334	— 1·32	25,364	24,663	— 2·76	974	..
Eulo	424	517	21·93	607	520	— 14·33	45	4,384
Gatton	684	652	— 4·68	949	1,305	37·51	77	75
Gayndah	7,433	6,837	— 8·02	10,429	9,664	— 7·34	414	9
Gin Gin	4,550	4,470	— 1·76	5,109	5,026	— 1·62	295	18
Gladstone	10,470	9,540	— 8·88	12,546	12,270	— 2·20	383	47
Goondiwindi	5,564	4,233	— 23·92	5,436	4,160	— 23·47	544	8,632
Gympie	1,401	1,326	— 5·35	8,118	7,839	— 3·44	165	33
Harrisville	384	351	— 8·59	1,149	1,110	— 3·39	49	5
Herberton	8,049	6,324	— 21·43	8,279	6,457	— 22·01	260	..
Hughenden	5,516	6,153	11·55	5,499	6,215	13·02	361	7,446
Hungerford	360	573	59·17	366	588	60·66	137	2,135
Ingham	3,235	2,905	— 10·20	3,345	2,988	— 10·67	165	5
Inglewood	2,215	2,149	— 2·98	2,365	2,440	3·17	224	3,155
Innisfail	195	192	— 1·54	264	307	16·29	6	..
Ipswich	271	314	15·87	1,149	1,021	— 11·14	4	18
Isisford	365	552	51·23	348	530	52·30	138	8,250
Julia Creek	4,763	5,649	18·60	5,089	6,095	19·77	303	4,758
Jundah	2,729	1,996	— 26·86	2,714	1,963	— 27·67	203	1,958
Kilcoy	299	283	— 5·35	1,082	875	— 19·13	95	..
Kilkivan	853	1,024	20·05	1,523	1,606	5·45	61	1
Killarney	433	386	— 10·85	745	716	— 3·89	62	84
Laidley	275	314	14·18	734	745	1·50	28	..
Logan	41	56	36·59	723	870	20·33	12	5
Longreach	1,028	1,318	28·21	1,039	1,443	38·88	300	14,225
Lowood	404	243	— 39·85	663	510	— 23·08	42	..

Table No. 31—*continued.*

Return showing Number of Calves Returned as Branded in the several Petty Sessions Districts of the State during the Years 1936 and 1937, the Centesimal Increase or Decrease, also the Number of Cattle and Sheep Killed for Farm or Station use during the latter Year.

Petty Sessions District.	Male.			Female.			Cattle Killed.	Sheep Killed.
	1936.	1937.	Increase or Decrease.	1936.	1937.	Increase or Decrease.	1936.	1937.
Mackay	14,596	14,689	0·64	15,693	15,935	1·54	789	12
Marburg	32	30	— 6·25	317	382	20·50	20	..
Mareeba	1,712	1,704	— 0·47	1,868	1,874	0·32	87	..
Maroochy	405	309	— 23·70	3,445	3,245	— 5·81	39	10
Maryborough	822	726	— 11·68	1,554	1,607	3·41	49	..
Mitchell	8,418	9,831	16·79	8,620	9,785	13·52	756	8,233
Monto	4,154	3,980	— 4·19	6,551	6,930	5·79	337	34
Mount Isa	298	359	20·47	242	347	43·39	46	..
Mount Morgan	7,121	6,732	— 5·46	9,833	9,927	0·96	460	27
Mount Perry	2,629	2,908	10·61	2,601	2,768	6·42	151	..
Muttaburra	643	790	22·86	573	813	41·88	97	9,664
Nanango	4,450	3,620	— 18·65	7,867	6,663	— 15·30	285	31
Norman	24,990	26,368	5·51	24,862	26,626	7·10	1,082	1
Oakey	2,338	1,781	— 23·82	6,010	4,725	— 21·38	291	1,756
Pittsworth..	2,046	1,925	— 5·91	3,726	3,640	— 2·31	119	2,570
Proserpine	1,445	1,293	— 10·52	1,589	1,487	— 6·42	32	102
Quilpie	2,957	1,462	— 50·56	2,994	1,472	— 50·84	331	7,021
Ravenswood	2,649	2,959	11·70	2,605	2,735	4·99	74	..
Redcliffe	54	78	44·44	948	893	— 5·80	6	..
Richmond	5,928	7,739	30·55	5,893	7,744	31·41	358	9,373
Rockhampton	33,949	32,847	— 3·25	36,706	35,585	— 3·05	1,368	159
Roma	10,189	10,611	4·14	10,407	10,831	4·07	790	5,406
Rosewood	301	368	22·26	1,117	1,129	1·07	43	22
St. George	1,097	1,045	— 4·74	1,107	795	— 28·18	149	5,757
St. Lawrence	15,128	15,668	3·57	15,071	15,512	2·93	640	62
Somerset	105	85	— 19·05	111	87	— 21·62	41	..
Southport	232	217	— 6·47	3,197	2,972	— 7·04	34	10
Springsure	11,559	11,415	— 1·25	11,523	11,058	— 4·04	656	2,064
Stanthorpe	659	562	— 14·72	748	603	— 19·39	77	2,012
Surat	1,054	1,369	29·89	995	1,458	46·53	175	7,203
Tambo	1,405	2,157	53·52	1,401	2,080	48·47	213	6,148
Taroom	9,688	8,071	— 16·69	9,797	8,345	— 14·82	762	198
Texas	954	943	— 1·15	1,030	1,066	3·50	82	1,369
Thargomindah	6,374	6,211	— 2·56	6,332	6,109	— 3·52	544	410
Tiaro	2,164	1,760	— 18·67	3,643	3,351	— 8·02	169	4
Toogoolawah	1,854	1,937	4·48	2,983	2,979	— 0·13	142	63
Toowoomba	789	572	— 27·50	2,980	2,534	— 14·97	45	225
Townsville..	2,173	2,788	28·30	2,242	2,736	22·03	136	..
Warwick	2,719	2,607	— 4·12	3,415	3,419	0·12	205	3,579
Wienholt	5,538	4,659	— 15·87	9,830	9,340	— 4·98	640	20
Windorah	4,700	4,846	3·11	4,667	4,577	— 1·93	411	1,982
Winton	2,328	4,932	111·86	2,301	4,984	116·60	324	11,002
Woodford	277	162	— 41·52	1,316	1,203	— 8·59	18	7
Wynnum	4	10	150·00	60	53	— 11·67	2	..
Yeulba	1,053	1,025	— 2·66	1,103	1,039	— 5·80	69	33
Total	506,362	519,008	2·50	581,362	593,815	2·14	30,786	254,875

Table No. 32.

Return for Ten Years showing the Number of Cattle and Sheep Killed in the State for Farm or Station Use, also the Centesimal Increase or Decrease. *For details for* 1937, *see Table* 31.

Year ended 31st December.	Cattle.	Increase or Decrease.	Sheep.	Increase or Decrease.
		%		%
1928	32,068	— 10·64	197,845	2·18
1929	28,194	— 12·08	229,329	15·91
1930	24,802	— 12·03	259,586	13·19
1931	26,857	8·29	268,541	3·45
1932	28,791	7·20	268,876	0·12
1933	30,973	— 7·58	267,644	— 0·46
1934	32,519	4·99	261,198	— 2·41
1935	31,578	— 2·89	254,807	— 2·45
1936	30,465	— 3·52	236,897	— 7·03
1937	30,786	— 1·05	254,875	7·59

— Decrease.

Table No. 33.

RETURN FOR TEN YEARS SHOWING THE NUMBER OF CALVES RETURNED AS BRANDED IN THE SEVERAL PASTORAL DISTRICTS OF THE STATE.

Year ended 31st December.	Burke.		Burnett.		Cook.		Darling Downs.		Gregory North.		Gregory South.		Leichhardt.		Maranoa.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
1928	67,279	67,954	35,508	47,385	54,459	55,892	35,612	43,770	1,535	1,552	12,676	12,870	66,044	65,327	16,660	16,514
1929	73,733	76,538	37,483	49,664	49,074	51,864	38,616	46,373	2,826	2,828	6,183	5,819	67,980	67,752	18,052	17.758
1930	69,158	68,250	41,851	54,769	52,893	55,761	40,859	48,230	7,318	7,482	5,669	5,566	79,533	80,083	18,128	17,545
1931	72,541	72,645	39,334	54,289	52,572	55,490	42,215	52,101	11,092	11,157	7,917	7,295	75,063	75,376	18,016	17,825
1932	63,072	63,691	32,830	48,809	48,969	53,136	44,526	57,120	14,596	14,336	9,527	9,042	65,958	66,764	18,508	18,902
1933	64,464	65,906	30,842	47,942	41,914	45,924	45,911	58,292	16,281	16,190	10,366	10,050	82,555	83,947	22,041	21,023
1934	76,453	76,672	35,896	55,500	50,347	52,507	53,131	66,898	21,606	20,745	11,955	11,877	91,545	91,961	22,584	22,844
1935	51,533	52,400	33,479	52,346	52,904	55,378	50,662	65,805	16,225	16,265	9,772	9,748	90,752	91,665	21,951	22,012
1936	68,898	69,546	29,892	44,776	61,405	63,371	36,190	49,266	18,795	18,851	10,621	10,610	80,909	81,958	19,765	19,947
1937	82,141	82,729	26,730	42,116	59,818	61,476	30,152	43,246	21,835	21,875	10,960	10,685	82,677	83,813	21,346	21,292

Year ended 31st December.	Mitchell.		Moreton.		North Kennedy.		Port Curtis.		South Kennedy.		Warrego.		Wide Bay.		Total.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
1928	7,301	7,424	20,938	37,035	53,152	53,313	32,670	37,791	36,995	36,653	12,402	12,160	15,350	25,346	468,581	520,986
1929	7,770	7,623	25,466	44,262	42,155	42,180	34,860	40,399	37.650	37,355	8,997	9,147	17,161	28,986	468,006	528,548
1930	9,719	9,737	25,456	45,725	44,827	44,962	38,956	42,872	44,004	43,734	10,282	10,360	17,781	30,332	506,434	565,408
1931	7,723	7,751	23,187	45,234	45,145	45,192	38,451	44,380	27,628	27,696	10,668	10,409	17,546	32,411	489,148	559,251
1932	9,337	9,322	18,354	44,632	36,957	37,186	34,265	41,769	26,915	27,286	12,078	11,967	13,645	30,290	449,537	534,252
1933	8,838	8,989	14,865	40,321	53,348	53,413	33,359	41,128	40,167	40,673	12,446	12,366	11,531	26,679	488,928	572,843
1934	7,204	7,174	15,424	41,115	59,897	59,714	43,146	48,408	44,845	45,718	11,974	11,860	14,504	30,375	560,511	643,368
1935	6,762	6,932	15,484	42,656	52,246	52,459	40,560	49,990	32,269	32,916	12,620	12,489	14,314	30,997	501.533	594,058
1936	5,935	5,752	12,945	33,589	59,958	60,367	39,679	47,586	36,160	36,647	12,736	13,062	12,474	26,034	506,362	581,362
1937	7,683	7,658	10,626	31,509	60,243	60,025	38,407	47,236	43,221	43,894	11,314	11,167	11,855	25,094	519,008	593,815

TABLE No. 34

Return for Ten Years showing the Number of Cattle and Sheep in the several Pastoral Districts of the State.

At 31st Dec.	Burke.		Burnett.		Cook.		Darling Downs.		Gregory North.		Gregory South.		Leichhardt.		Maranoa.	
	Cattle.	Sheep.	Cattle.	Sheep.	Cattle.	Sheep.	Cattle.	Sheep.	Cattle.	Sheep.	Cattle.	Sheep.	Cattle.	Sheep.	Cattle.	Sheep.
1928 ..	582,748	2,313,118	483,320	7,762	489,935	3,042	429,716	2,637,366	58,147	702,502	112,514	221,216	562,465	1,172,793	188,546	3,366,073
1929 ..	586,242	2,772,704	506,443	8,161	472,041	2,506	450,071	2,945,532	65,545	1,215,608	83,170	203,830	595,395	1,252,201	176,690	3,542,002
1930 ..	624,489	3,118,929	547,920	7,884	480,650	1,818	469,690	2,757,931	76,530	1,708,231	65,443	327,585	646,023	1,264,970	167,801	3,559,542
1931 ..	612,691	3,006,501	563,567	7,092	513,174	1,246	491,550	2,697,272	95,671	1,963,870	87,917	409,808	656,041	931,260	164,581	3,476,600
1932 ..	553,984	2,180,585	548,849	5,644	501,147	751	509,785	2,570,075	122,354	1,802,425	93,710	446,819	657,561	873,221	170,335	3,606,726
1933 ..	589,181	2,676,981	556,088	4,161	499,581	538	552,706	2,543,077	153,281	1,626,633	107,641	432,215	694,426	966,409	179,551	3,357,087
1934 ..	568,008	2,595,492	581,404	4,398	497,111	302	608,313	2,612,978	183,521	1,672,909	112,585	484,814	742,965	1,077,362	187,422	3,818,971
1935 ..	535,698	1,652,857	583,634	6,042	510,183	361	641,660	2,557,271	163,971	1,036,174	99,500	397,975	777,052	1,140,818	184,761	3,738,455
1936 ..	560,429	2,084,898	548,322	5,498	539,277	468	552,113	2,519,353	178,671	1,325,769	107,981	454,863	752,003	1,161,181	179,441	3,646,470
1937 ..	608,971	2,572,953	539,533	4,652	525,072	500	585,567	3,054,949	170,921	1,644,143	94,810	347,877	731,441	1,094,566	185,281	4,318,007

At 31st Dec.	Mitchell.		Moreton.		North Kennedy.		Port Curtis.		South Kennedy.		Warrego.		Wide Bay.		Total.	
	Cattle.	Sheep.	Cattle.	Sheep.	Cattle.	Sheep.	Cattle.	Sheep.	Cattle.	Sheep.	Cattle.	Sheep.	Cattle.	Sheep.	Cattle.	Sheep.
1928 ..	68,569	4,893,564	520,775	20,190	461,951	6,589	415,192	29,830	317,997	213,677	128,118	2,915,641	308,348	5,838	5,128,341	18,509,201
1929 ..	67,762	5,327,072	561,468	18,097	454,220	6,718	429,675	33,206	334,775	245,928	101,148	2,735,225	323,943	5,513	5,208,588	20,324,303
1930 ..	74,767	6,280,786	584,841	16,145	462,832	6,950	463,750	31,701	367,446	245,222	96,445	3,208,332	335,097	6,017	5,463,724	22,542,043
1931 ..	72,340	6,126,561	608,304	13,396	435,463	4,195	482,234	28,083	299,127	171,189	103,682	3,481,826	359,050	5,379	5,550,399	22,324,278
1932 ..	85,763	6,071,563	601,566	9,968	437,422	6,140	464,323	27,439	317,989	152,443	113,281	3,554,528	351,996	4,538	5,535,065	21,312,865
1933 ..	80,637	5,124,159	590,867	8,372	472,667	4,684	486,273	27,472	349,810	218,604	114,813	3,077,736	353,648	4,616	5,781,170	20,072,804
1934 ..	76,258	5,611,084	605,864	7,829	502,024	5,586	517,459	25,409	378,663	257,246	123,381	3,388,753	367,663	4,049	6,052,641	21,574,182
1935 ..	69,171	4,179,095	593,591	11,086	489,586	4,049	536,711	28,731	359,271	295,968	120,215	3,006,984	368,000	4,227	6,033,004	18,060,093
1936 ..	65,083	5,140,402	533,870	9,848	536,207	3,773	554,509	27,850	364,706	238,575	128,688	3,389,061	349,272	3,740	5,950,572	20,011,749
1937 ..	63,276	5,783,127	521,412	11,141	538,332	3,561	560,173	25,321	380,423	278,947	105,846	3,355,923	348,107	2,303	5,959,165	22,497,970

Table No. 35.

RETURN OF THE NUMBER OF HORSES, CATTLE, SHEEP, AND PIGS, IN THE VARIOUS PASTORAL DISTRICTS OF THE STATE AS AT 31st DECEMBER, 1936 AND 1937, TOGETHER WITH THE NUMERICAL AND CENTESIMAL INCREASE OR DECREASE DURING THE YEAR.

Pastoral District.	Year.	Horses.	Cattle.	Sheep.	Pigs.	Numerical Increase or Decrease – Horses.	Numerical Increase or Decrease – Cattle.	Numerical Increase or Decrease – Sheep.	Numerical Increase or Decrease – Pigs.	Centesimal Increase or Decrease – Horses.	Centesimal Increase or Decrease – Cattle.	Centesimal Increase or Decrease – Sheep.	Centesimal Increase or Decrease – Pigs.
..	1936 1937	29,755 30,991	560,429 608,971	2,084,898 2,572,953	252 302	1,236	48,542	488,055	50	4·15	8·66	23·41	19·84
ett ..	1936 1937	35,321 35,610	548,322 539,533	5,498 4,652	65,387 62,878	289	– 8,789	– 846	– 2,509	0·82	– 1·60	– 15·39	– 3·84
..	1936 1937	34,014 33,446	539,277 525,072	468 500	9,843 10,748	– 568	– 14,205	32	905	– 1·67	– 2·63	6·84	9·19
ng Downs	1936 1937	61,158 61,651	552,113 535,567	2,519,353 3,054,949	60,089 58,824	493	– 16,546	535,596	– 1,265	0·81	– 3·00	21·26	– 2·11
ory North	1936 1937	10,202 10,162	178,671 170,921	1,325,769 1,684,143	83 111	– 40	– 7,750	358,374	28	– 0·39	– 4·34	27·03	33·73
ory South	1936 1937	6,020 5,617	107,981 94,810	454,863 307,877	13 1	– 403	– 13,171	– 146,986	– 12	– 6·69	– 12·20	– 32·31	– 92·31
hardt ..	1936 1937	38,516 39,743	752,003 781,441	1,161,181 1,094,566	1,948 2,139	1,227	29,438	– 66,615	191	3·19	3·91	– 5·74	9·80
noa ..	1936 1937	21,159 21,662	179,441 185,281	3,646,470 4,318,007	1,644 1,485	503	5,840	671,537	– 159	2·38	3·25	18·42	– 9·67
nell ..	1936 1937	19,661 20,027	65,083 63,276	5,140,402 5,783,127	479 652	366	– 1,807	642,725	173	1·86	– 2·78	12·50	36·12
ton ..	1936 1937	52,966 53,449	533,870 521,412	9,848 11,141	102,141 98,477	483	– 12,458	1,293	– 3,664	0·91	– 2·33	13·13	– 3·59
h Kennedy	1936 1937	45,018 45,665	536,207 538,332	3,773 3,561	5,913 5,657	647	2,125	– 212	– 256	1·44	0·40	– 5·62	– 4·33
Curtis	1936 1937	26,376 26,778	554,509 560,173	27,850 25,321	9,665 11,029	402	5,664	– 2,529	1,364	1·52	1·02	– 9·08	14·11
n Kennedy	1936 1937	21,842 23,152	364,706 380,423	238,575 278,947	1,537 1,201	1,310	15,717	40,372	– 336	6·00	4·31	16·92	– 21·86
ego ..	1936 1937	14,003 13,830	128,688 105,846	3,389,061 3,355,923	274 260	– 173	– 22,842	– 33,138	– 14	– 1·24	– 17·75	– 0·98	– 5·11
Bay	1936 1937	25,525 24,994	349,272 348,107	3,740 2,303	31,587 29,177	– 531	– 1,165	– 1,437	– 2,410	– 2·08	– 0·33	– 38·42	– 7·63
in State	1936 1937	441,536 446,777	5,950,572 5,959,165	20,011,749 22,497,970	290,855 282,941	5,241	8,593	2,486,221	– 7,914	1·19	0·14	12·42	– 2·72

Pastoral and Petty Sessions Districts.

ral ct.	Petty Sessions District.	Pastoral District.	Petty Sessions District.	Pastoral District.	Petty Sessions District.	Pastoral District	Petty Sessions District.
..	Burke Camooweal Mt. Isa Richmond Cloncurry, part of Croydon, part of Hughenden, part of Julia Creek, part of Norman, part of	Darling Downs —*contd.*	Clifton, part of Condamine, part of Crow's Nest, part of Nanango, part of Oakey, part of Toowoomba, part of	Mitchell —*contd.*	Longreach Muttaburra Alpha, part of Aramac, part of Blackall, part of Hughenden, part of Jundah, part of Tambo, part of Winton, part of	North Kennedy —*contd.*	Proserpine Ravenswood Townsville Cape River, part of Collinsville, part of Herberton. part of Mackay, part of
..	Gayndah Monto Mount Perry Wienholt Biggenden, part of Eidsvold, part of Gin Gin, part of Nanango, part of	Gregory North	Boulia Cloncurry, part of Diamantina, part of Julia Creek, part of Jundah, part of Windorah, part of Winton, part of	Moreton	Beaudesert Brisbane Caboolture Cleveland Dugandan Esk Gatton Harrisville Ipswich Kilcoy Laidley Logan Lowood Marburg Redcliffe Rosewood Southport Toogoolawah Wynnum Clifton, part of Crow's Nest, part of Gympie, part of Kilcoy, part of Maroochy, part of Nanango, part of Oakey, part of Toowoomba, part of Woodford part of	Port Curtis	Gladstone Bundaberg, part of Mackay, part of Mount Morgan, part of Rockhampton, part of St. Lawrence, part of
..	Atherton Cairns Chillagoe Coen Cook Douglas Etheridge Innisfail Mareeba Somerset Croydon, part of Herberton, part of Norman, part of	Gregory South	Adavale, part of Diamantina, part of Quilpie, part of Thargomindah, part of Windorah, part of	North Kennedy	Ayr Bowen Cardwell Charters Towers Ingham	South Kennedy	Alpha, part of Aramac, part of Cape River, part o Clermont, part of Collinsville, part of Mackay, part of
	Allora Chinchilla Dalby Goondiwindi Inglewood Killarney Pittsworth Stanthorpe Texas Warwick	Leichhardt	Banana Emerald Springsure Taroom Clermont, part of Condamine, part of Eidsvold, part of Mackay, part of Mount Morgan, part of Rockhampton, part of Roma, part of St. Lawrence, part of			Warrego	Augathella Eulo Hungerford Adavale, part of Blackall, part of Charleville, part of Cunnamulla, part of Quilpie, part of Tambo, part of Thargomindah, part of
		Maranoa	Bollon Dirranbandi Mitchell St. George Surat Yeulba Charleville, part of Cunnamulla, part of Roma, part of			Wide Bay	Childers Kilkivan Maryborough Tiaro Biggenden, part of Bundaberg, part of Gin Gin, part of Gympie, part of Kilcoy, part of Maroochy, part of Woodford, part of
		Mitchell	Barcaldine Isisford				

Table No. 36.

RETURN FOR TEN YEARS SHOWING THE DENSITY OF LIVE STOCK IN THE STATE.

(In Converting Horses and Cattle to terms of Sheep, Ten Head of Sheep are taken as Equal to One Horse or Head of Cattle.)

At 31st December.	Horses.			Cattle.			Sheep.			All Kinds in Terms of Sheep.		
	Acres per Head.	Number per Square Mile.	Number per Capita Population.	Acres per Head.	Number per Square Mile.	Number per Capita Population.	Acres per Head.	Number per Square Mile.	Number per Capita Population.	Acres per Head.	Number per Square Mile.	Number per Capita Population.
1928	821	0·78	0·59	84	7·65	5·76	23	27·61	20·77	5·72	111·88	84·19
1929	858	0·75	0·55	82	7·77	5·77	21	30·31	22·52	5·54	115·45	85·79
1930	891	0·72	0·53	79	8·15	5·96	19	33·62	24·58	5·23	122·29	89·42
1931	914	0·70	0·50	77	8·28	5·97	19	33·29	24·01	5·20	123·08	88·74
1932	948	0·67	0·48	78	8·26	5·89	20	31·79	22·69	5·29	121·09	86·43
1933	954	0·67	0·47	74	8·62	6·09	21	29·94	21·15	5·21	122·87	86·79
1934	957	0·67	0·47	71	9·03	6·31	20	32·18	22·48	4·96	129·14	90·24
1935	971	0·66	0·46	71	9·00	6·21	24	26·94	18·60	5·18	123·50	85·31
1936	972	0·66	0·45	72	8·87	6·06	21	29·85	20·38	5·11	125·18	85·46
1937	960	0·67	0·45	72	8·89	6·00	19	33·55	22·65	4·93	129·09	87·13

Table No. 37.

RETURN SHOWING THE NUMBER OF OWNERS AND THE SIZES OF HERDS OF CATTLE UNDER VARIOUS GROUPINGS IN THE SEVERAL PASTORAL DISTRICTS OF THE STATE AS AT 31ST DECEMBER, 1937.

Pastoral District.	1–99.		100–199.		200–299.		300–499.		500–999.	
	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.
Burke	365	9,589	46	6,358	18	4,438	32	12,295	39	28,755
Burnett	4,073	177,198	691	91,947	147	35,537	135	51,112	108	72,511
Cook	1,930	51,547	126	16,548	36	8,648	37	13,992	25	17,172
Darling Downs	7,459	238,496	741	99,966	184	43,458	126	46,353	68	46,134
Gregory North	173	3,928	10	1,355	5	1,244	7	2,795	10	6,786
Gregory South	55	1,441	13	1,782	4	981	4	1,485	9	6,365
Leichhardt	2,086	42,988	264	37,698	134	32,661	141	53,223	163	114,963
Maranoa	1,267	37,183	171	23,609	50	12,420	57	21,047	24	15,934
Mitchell	725	17,422	37	5,074	19	4,699	16	5,986	7	5,085
Moreton	10,582	317,801	681	91,088	138	32,898	91	34,466	39	25,273
North Kennedy	2,316	40,678	130	17,546	62	15,112	57	21,772	61	42,492
Port Curtis	2,791	104,096	437	59,607	135	32,080	114	43,099	120	81,658
South Kennedy	1,082	24,521	74	10,375	49	12,040	39	14,829	46	32,387
Warrego	472	13,590	64	8,827	22	5,167	24	9,425	19	14,105
Wide Bay	5,363	164,448	483	64,831	85	20,130	74	28,193	43	29,452
Total	40,739	1,244,926	3,968	536,611	1,088	261,513	954	360,072	781	539,072

Pastoral District.	1,000–4,999.		5,000–9,999.		10,000 and Upwards		Total.		Percentage to Grand Total.	
	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.
Burke	46	87,391	23	172,203	17	287,942	586	608,971	1·21	10·22
Burnett	51	86,272	4	24,956	..	..	5,209	539,533	10·77	9·05
Cook	50	128,298	9	64,583	11	224,284	2,224	525,072	4·60	8·81
Darling Downs	29	55,634	1	5,526	..	..	8,608	535,567	17·79	8·99
Gregory North	24	57,039	8	52,354	3	45,420	240	170,921	0·50	2·87
Gregory South	13	24,775	5	33,413	2	24,568	105	94,810	0·22	1·59
Leichhardt	159	306,815	24	156,504	3	36,589	2,974	781,441	6·15	13·11
Maranoa	19	37,792	4	25,665	1	11,631	1,593	185,281	3·29	3·11
Mitchell	13	25,010	..	..	..	..	817	63,276	1·69	1·06
Moreton	14	19,886	..	..	..	..	11,545	521,412	23·86	8·75
North Kennedy	74	168,566	14	85,961	8	146,205	2,722	538,332	5·62	9·04
Port Curtis	96	186,413	6	41,572	1	11,648	3,700	560,173	7·65	9·40
South Kennedy	55	105,613	18	121,301	4	59,357	1,367	380,423	2·82	6·38
Warrego	20	35,257	1	8,150	1	11,325	623	105,846	1·29	1·78
Wide Bay	20	41,053	..	..	..	..	6,068	348,107	12·54	5·84
Total	683	1,365,814	117	792,188	51	858,969	48,381	5,959,165	100·00	100·00

Table No. 38.

Return showing the Number of Owners and the Sizes of Herds of Cattle under Various Groupings in the Southern, Central, and Northern Divisions of the State as at 31st December, 1937.

Division.	1–99.		100–199.		200–299.		300–499.		500–999.	
	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.
Southern	29,575	960,985	2,950	397,045	690	165,204	566	212,923	351	237,797
Central	5,617	160,890	656	90,687	254	61,430	240	90,921	286	199,419
Northern	5,547	123,051	362	48,879	144	34,879	148	56,228	144	101,856
Total	40,739	1,244,926	3,968	536,611	1,088	261,513	954	360,072	781	539,072

Division.	1,000–4,999.		5,000–9,999.		10,000 and Upwards.		Total.		Percentage to Grand Total.	
	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.
Southern	193	354,821	17	112,335	4	47,524	34,346	2,488,634	70·99	41·76
Central	292	571,210	46	299,680	8	103,741	7,399	1,577,978	15·29	26·48
Northern	198	439,783	54	380,173	39	707,704	6,636	1,892,553	13·72	31·76
Total	683	1,365,814	117	792,188	51	858,969	48,381	5,959,165	100·00	100·00

Table No. 39.

Return showing the Number of Owners and the Sizes of Flocks of Sheep under various Groupings in the several Pastoral Districts of the State as at 31st December, 1937.

Pastoral District.	1–49.		50–99.		100–249.		250–499.		500–999.		1,000–1,999.		2,000–4,999.	
	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.
Burke	6	62	4	317	3	530	4	1,431	9	6,404	16	23,399	139	509,161
Burnett	53	775	7	495	5	924	2	600	3	1,858	..	..	..	..
Cook	8	243	1	97	1	160	..	..	..	..	..	..	..	..
Darling Downs	209	3,708	84	5,760	147	24,364	193	72,291	316	231,116	349	499,638	332	1,037,310
Gregory North	9	127	..	..	3	481	1	300	3	1,870	16	23,373	68	255,466
Gregory South	3	88	1	87	..	..	4	1,453	4	3,023	8	11,459	19	61,797
Leichhardt	50	1,193	21	1,520	21	3,175	21	7,581	36	25,974	75	108,147	105	321,436
Maranoa	29	596	16	1,145	24	4,057	30	10,828	97	73,309	182	262,243	318	1,034,923
Mitchell	14	212	3	188	11	1,813	9	3,274	19	13,448	46	68,795	230	809,270
Moreton	153	2,856	20	1,265	8	1,145	..	..	3	1,739	1	1,801	1	2,335
North Kennedy	22	373	4	253	7	1,056	4	1,359	1	520	..	..	..	..
Port Curtis	56	1,170	14	1,041	5	755	6	1,988	3	1,812	3	4,614	2	5,241
South Kennedy	11	190	8	544	1	120	4	1,375	7	5,534	10	13,883	16	56,036
Warrego	7	89	4	294	9	1,309	7	2,584	10	7,372	31	48,010	196	648,115
Wide Bay	74	1,136	7	494	4	673	..	..	..	..	..	..	..	..
Total	704	12,818	194	13,500	249	40,562	285	105,064	511	373,979	737	1,065,362	1,426	4,741,090

Pastoral District.	5,000–9,999.		10,000–19,999.		20,000–49,999.		50,000–99,999.		100,000 and Upwards.		Total.		Percentage to Grand Total.	
	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.
Burke	119	795,366	46	642,314	18	525,918	1	68,051	..	..	365	2,572,953	6·64	11·44
Burnett	..	..	..	..	..	..	..	..	..	..	70	4,652	1·27	0·02
Cook	..	..	..	..	..	..	..	..	..	..	10	500	0·18	0·00
Darling Downs	86	566,714	21	275,239	12	338,809	..	..	..	..	1,749	3,054,949	31·81	13·58
Gregory North	57	376,721	21	262,628	18	557,601	3	205,576	..	..	199	1,684,143	3·62	7·49
Gregory South	6	41,815	8	115,865	2	72,290	..	..	..	..	55	307,877	1·00	1·37
Leichhardt	36	240,856	10	136,343	8	248,341	..	..	..	..	383	1,094,566	6·97	4·86
Maranoa	187	1,266,735	66	876,269	20	557,659	1	52,473	1	177,770	971	4,318,007	17·66	19·19
Mitchell	264	1,849,226	86	1,188,638	44	1,245,521	9	602,742	..	..	735	5,783,127	13·37	25·70
Moreton	..	..	..	..	..	..	..	..	..	..	186	11,141	3·38	0·05
North Kennedy	..	..	..	..	..	..	..	..	..	..	38	3,561	0·69	0·02
Port Curtis	1	8,700	..	..	..	..	..	..	..	..	90	25,321	1·64	0·11
South Kennedy	8	56,474	6	77,712	..	..	1	67,079	..	..	72	278,947	1·31	1·24
Warrego	147	1,021,466	56	756,183	17	511,031	6	359,470	..	..	490	3,355,923	8·91	14·92
Wide Bay	..	..	..	..	..	..	..	..	..	..	85	2,303	1·55	0·01
Total	911	6,224,073	320	4,331,191	139	4,057,170	21	1,355,391	1	177,770	5,498	22,497,970	100·00	100·00

Table No. 40.

Return showing the Number of Owners and the Sizes of Flocks of Sheep under various Groupings in the Southern, Central, and Northern Divisions of the State as at 31st December, 1937

Division.	1–49.		50–99.		100–249.		250–499.		500–999.		1,000–1,999.		2,000–4,999.	
	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.
Southern	548	9,770	149	10,201	202	33,408	241	89,458	444	325,733	587	844,726	881	2,828,917
Central	110	2,192	32	2,351	36	5,408	35	12,518	54	39,062	132	194,387	401	1,385,365
Northern	46	856	13	948	11	1,746	9	3,088	13	9,184	18	26,249	144	526,808
Total	704	12,818	194	13,500	249	40,562	285	105,064	511	373,979	737	1,065,362	1,426	4,741,090

Division.	5,000–9,999.		10,000–19,999.		20,000–49,999.		50,000–99,999.		100,000 and Upwards.		Total.		Percentage to Grand Total.	
	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.
Southern	430	2,919,402	152	2,033,556	51	1,479,789	7	411,943	1	177,770	3,693	11,164,673	67·17	49·62
Central	360	2,497,562	119	1,604,115	70	2,051,463	13	875,397	..	..	1,362	8,669,820	24·77	38·54
Northern	121	807,109	49	693,520	18	525,918	1	68,051	..	..	443	2,663,477	8·06	11·84
Total	911	6,224,073	320	4,331,191	139	4,057,170	21	1,355,391	1	177,770	5,498	22,497,970	100·00	100·00

Table No. 41.

RETURN FOR TEN YEARS SHOWING THE NUMBER OF HORSES, CATTLE, SHEEP, AND PIGS, IN THE SOUTHERN, CENTRAL, AND NORTHERN DIVISIONS OF THE STATE.

At 31st December.	Southern.				Central.				Northern.			
	Horses.	Cattle.	Sheep.	Pigs.	Horses.	Cattle.	Sheep.	Pigs.	Horses.	Cattle.	Sheep.	Pigs.
1928	253,377	2,299,516	9,224,903	187,582	109,510	1,115,865	6,886,846	10,852	159,603	1,712,960	2,397,452	17,330
1929	244,604	2,332,195	9,520,339	204,291	104,807	1,184,999	7,943,392	11,571	150,693	1,691,394	2,860,572	20,175
1930	235,769	2,408,854	9,957,562	189,248	101,806	1,290,133	9,353,534	9,270	144,040	1,764,737	3,230,947	19,010
1931	233,390	2,524,266	10,160,434	199,717	103,419	1,310,131	9,072,850	8,095	132,665	1,716,002	3,090,994	14,874
1932	225,662	2,536,342	10,274,672	193,652	100,097	1,319,371	8,753,213	7,177	126,727	1,679,352	2,284,9[illegible]0	12,420
1933	223.465	2,610,345	9,504,715	195,853	99,099	1,406,193	7,787,203	7,843	127,460	1,764,632	2,780,886	13,752
1934	225,244	2,749,310	10,407,190	244,848	98,953	1,521,144	8,465,324	9,453	124,407	1,782,187	2,701,668	15,572
1935	223,671	2,765,225	9,812,659	277,471	94,963	1,524,691	6,504,151	10,387	123,279	1,743,088	1,743,283	17,030
1936	222,077	2,542,660	10,130,985	261,469	95,186	1,554,195	7,700,652	12,009	124,273	1,853,717	2,180,112	17,377
1937	223,222	2,488,634	11,164,673	251,488	97,794	1,577,978	8,669,820	13,634	125,761	1,892,553	2,663,477	17,819

Table No. 42.

RETURN FOR TEN YEARS SHOWING THE NUMBER OF CATTLE, SHEEP, ETC., SLAUGHTERED AT FACTORIES, SLAUGHTER-HOUSES, AND ON HOLDINGS, FOR CONSUMPTION AS FOOD IN THE STATE, TOGETHER WITH THE AVERAGE DRESSED WEIGHT OF EACH ANIMAL AND THE ESTIMATED QUANTITY CONSUMED PER CAPITA.

Year.	Mean Population for the Year. ¶	* Number Slaughtered.					Average Dressed Weight.					‡ Consumption per Capita.					
		Cattle.	Sheep.	Calves.	Lambs.	Pigs.	Cattle.	Sheep.	Calves.	Lambs.	Pigs.	Beef.	Mutton.	Veal.	Lamb.	Pork.	Total.
							lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
1928	884,815	307,791	725,375	45,793	19,570	73,917	540	42	76	30	83	187·81	34·43	3·93	0·66	6·93	233·76
1929	897,569	287,023	858,563	43,527	26,403	83,526	539	43	47	31	89	172·33	41·12	2·28	0·91	8·28	224·92
1930	910,319	260,522	1,110,997	46,286	31,058	79,407	525	41	52	30	87	150·45	50·42	2·65	1·03	7·60	212·15
1931	924,825	255,213	1,210,090	47,662	38,509	96,616	532	42	52	30	84	146·65	54·68	2·70	1·25	8·82	214·10
1932	935,575	271,809	1,186,476	54,598	62,542	95,631	522	42	60	30	84	151·49	53·57	3·53	1·98	8·59	219·16
1933	945,454	§302,669	§1,170,363	§76,086	§55,193	§342,357	531	41	61	28	83	169·79	50·76	4·92	1·64	30·05	257·16
1934	955,584	326,334	983,326	69,907	40,176	369,704	528	41	63	29	83	180·18	42·43	4·80	1·23	32·38	261·02
1935	966,198	350,928	852,897	77,523	34,779	402,700	516	41	62	31	83	187·42	36·21	4·07	1·11	34·53	264·24
1936	978,589	362,565	844,155	94,891	31,550	424,572	522	43	58	30	81	193·45	36·75	5·61	0·98	35·22	272·01
1937	989,668	†412,711	886,038	96,719	35,963	365,148	500	42	58	30	79	208·44	37·33	5·65	1·10	29·30	281·82

* Includes slaughterings on Farms and Stations, of which, in 1937, there were 30,786 Cattle, 254,875 Sheep, and 4,913 Pigs.
† Exclusive of certain cattle slaughtered for Interstate consumption.
‡ Figures revised on adjusted census populations.
¶ Adjusted census populations.
§ Includes, for the first time, animals slaughtered for home consumption in meatworks.

Table No. 43.

MEATWORKS, 1928-37.

Year.	Establishments.	Hands. a	Capital Equipment.		Horse-power of Engines	Value of Output.	Stock Slaughtered. b					Value at Works. c		
			Value of Land and Buildings.	Value of Machinery and Plant.			Cattle.	Calves.	Sheep.	Lambs.	Pigs.	Cattle and Calves.	Sheep and Lambs.	Pigs.
	No.	No.	£	£	H.P.	£	No.	No.	No.	No.	No.	£	£	£
8	20	2,828	1,624,519	1,031,396	10,969	5,433,754	380,212	d	3,777	..	241,871	2,984,962	3,777	742,697
9	19	2,499	1,560,776	968,572	10,479	5,537,481	331,612	d	59,000	1,516	307,371	2,965,791	49,095	893,351
0	18	2,447	1,468,233	875,413	9,302	5,104,321	303,210	d	186,743	18,269	283,065	2,915,766	125,746	838,742
1	18	2,393	1,459,304	864,702	9,318	4,908,964	341,665	d	487,756	41,434	528,649	2,690,646	271,297	741,314
2	17	1,816	1,365,604	771,373	9,185	3,231,652	229,501	8,273	478,802	34,573	311,599	1,403,998	266,597	604,272
3	17	2,133	1,190,531	665,682	7,693	4,041,733	311,499	71,705	711,453	121,616	316,727	1,779,215	335,091	623,406
4	18	2,242	1,204,885	714,192	6,433	4,413,837	388,064	107,091	541,010	53,714	343,727	2,112,831	366,824	762,338
5	20	2,373	1,386,603	780,362	7,114	5,487,237	412,532	195,233	586,852	71,750	426,141	2,555,841	450,448	954,312
6	20	2,754	1,438,192	776,523	7,338	5,551,980	353,025	220,534	362,748	46,998	492,416	2,542,667	348,967	1,087,577
7	22	3,154	1,483,406	861,788	11,251	7,125,772	499,090	276,623	456,687	52,955	458,018	3,504,641	500,227	1,071,741

MEAT PRODUCED. (e).

Year.	Quantity.						Value.					
	Beef.	Veal.	Mutton.	Lamb.	Pork.	Bacon and Ham.	Beef.	Veal.	Mutton.	Lamb.	Pork.	Bacon and Ham.
	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	£	£	£	£	£	£
28	224,980,473	f	161,757		649,078	17,986,523	2,751,288	f	2,992	..	20,940	845,805
29	204,083,395	f	2,624,942	46,859	1,289,112	21,710,900	2,835,130	f	45,629	775	42,729	1,038,687
30	181,783,049	f	7,821,124	535,898	2,235,411	18,924,040	2,666,569	f	97,899	8,866	68,120	1,016,102
31	206,020,624	f	20,794,666	1,289,983	7,274,913	19,842,633	2,499,218	f	233,065	24,802	165,509	786,622
32	136,231,005	f	20,863,603	1,110,969	5,161,284	19,639,692	1,295,332	f	258,072	21,360	116,161	649,585
33	184,824,639	8,221,268	29,469,103	3,636,277	7,027,620	16,701,874	1,848,623	121,637	313,677	56,206	153,027	601,413
34	235,315,404	5,655,949	21,733,362	1,597,122	8,795,106	18,573,812	1,982,258	47,338	305,426	33,631	203,432	676,129
35	246,579,311	8,917,157	23,861,676	2,084,877	12,108,774	21,474,749	2,434,910	93,193	302,619	15,609	305,172	832,860
36	207,866,018	9,463,904	13,884,093	1,429,753	13,601,567	23,017,074	2,298,730	106,220	216,714	43,402	350,069	889,112
37	276,288,408	11,255,627	19,422,734	1,555,768	14,963,011	20,002,189g	3,317,191	158,838	291,301	43,252	395,941	781,606

OTHER PRODUCTS OF MEATWORKS.

Year.	Canned and Potted Meats.	Small Goods.	Meat Extracts.	Meat Meal.	Sausage Casings.	Lard.	Other Edible Fats.	Tallow.	Oils.	Hides.	Skins.	Fertiliser, Dried Blood, etc.
						QUANTITY.						
	Lb.	Lb.	Lb.	Lb.	Cwt.	Lb.	Lb.	Tons.	Gallons.	No.	No.	Tons.
-28	h	n	77,764	n	n	839,959	9,070,227	5,302	19,899	369,927	4,048	5,626
-29	h	n	84,283	n	n	1,112,954	10,574,003	6,455	18,584	329,162	63,146	4,831
-30	h	n	78,843	n	n	989,890	10,862,045	3,682	13,832	298,455	209,757	4,066
-31	h	n	65,894	n	n	993,936	13,031,746	4,158	18,125	338,653	532,484	4,935
-32	h	n	81,743	n	n	1,083,818	8,771,038	3,457	11,902	233,985	456,858	3,616
-33	h	n	31,459	n	n	893,216	11,436,961	2,444	13,487	329,482	881,262	3,634
-34	h	n	40,744	n	n	1,174,738	15,908,027	4,638	24,013	324,729	373,831	5,742
-35	h	n	52,184	n	n	1,262,876	18,648,859	5,232	22,041	411,850	849,920	8,243
-36	12,528,405	16,186,673	43,214	2,418,424	8,994	1,303,513	16,001,467	4,398	20,466	603,219i	410,140	7,188
-37	10,854,405	16,054,140	116,165	3,408,983	11,584	1,174,119	19,876,923	7,436	30,700	775,348i	506,497	8,570
						VALUE.						
	£	£	£	£	£	£	£	£	£	£	£	£
-28	h	n	14,750	n	n	28,563	197,418	178,381	4,735	718,253	1,849	54,959
-29	h	n	15,980	n	n	40,517	231,239	156,290	5,242	463,693	22,857	49,046
-30	h	n	14,955	n	n	37,216	203,281	94,165	3,142	298,953	35,619	45,096
-31	h	n	8,920	n	n	30,587	182,898	89,515	3,817	325,698	73,520	48,653
-32	h	n	11,954	n	n	23,308	99,432	62,520	2,363	189,009	87,305	29,821
-33	h	n	4,170	n	n	17,093	118,513	46,974	2,618	286,139	165,083	29,764
-34	h	n	5,656	n	n	22,806	175,014	81,683	4,840	314,594	93,275	45,945
-35	h	n	5,327	n	n	27,726	216,797	120,128	4,381	367,367	158,834	57,222
-36	221,431	312,709	4,095	9,172	31,516	32,666	212,580	111,915	3,851	439,687i	116,881	51,802
-37	293,326	329,175	10,889	12,937	39,830	29,239	234,712	194,067	6,087	650,834i	196,236	60,370

) Average for whole year. (b) Including stock slaughtered and subsequently condemned—In 1936-37, cattle 7,331, calves 10,196, sheep 1,308, mbs 131, pigs 5,804. (c) Values partly estimated prior to 1931-32. (d) Included in cattle. (e) Including canned and potted meats prior to 1935-36.) Included in beef. (g) Excluding 468,196 lb. of green bacon finished and 43,148 lb. made on commission. (h) Included in "Meat produced." Collected parately for the first time in 1935-36. (i) Including calf skins formerly included with skins. (n) Not available.

Table No. 44.

RETURN SHOWING THE PURE BREEDS OF CATTLE RETURNED IN THE SEVERAL PETTY SESSIONS DISTRICTS OF THE STATE AS AT 31ST DECEMBER, 1937.

Petty Sessions District.	Aberdeen Angus.	Ayrshire.	Devon.	Friesian.	Guernsey.	Hereford.	Jersey.	Milking Shorthorn and Aust. Illawarra Shorthorn.	Polled Hereford.	Red Polled.	Shorthorn.	Crossed and Unspecified.	Total.
Adavale	..	..	..	..	..	..	..	..	..	..	2,096	3,794	5,890
Allora	..	..	..	..	2	134	18	251	..	..	248	11,364	12,017
Alpha	..	..	..	..	..	..	..	17	..	200	7,956	50,089	58,262
Aramac	117	..	..	..	..	169	18	81	..	..	97	4,059	4,541
Atherton	1	5	..	59	58	..	2,500	5,940	..	..	284	35,325	44,172
Augathella	..	..	..	6	..	1,309	50	5	..	..	625	24,566	26,561
Ayr	..	..	100	..	..	..	90	200	..	595	1,596	32,804	35,385
Banana	..	..	..	11	..	22,487	106	437	..	..	114	34,556	57,711
Barcaldine	..	..	..	..	..	..	12	60	..	153	924	2,776	3,925
Beaudesert	50	10	..	1	..	603	913	1,520	..	..	207	67,001	70,305
Biggenden	..	74	..	8	65	500	1,065	1,407	5	..	..	38,902	42,026
Blackall	20	126	..	..	..	..	48	86	..	..	1,022	4,710	6,012
Bollon	..	..	..	..	..	334	47	12	..	..	1,814	7,668	9,875
Boulia	..	..	..	..	..	..	..	..	..	..	32,619	1,124	33,743
Bowen	18	2	20	..	..	7	6	66	..	11	27	28,238	28,395
Brisbane	..	91	..	91	..	..	801	439	..	..	3	20,202	21,627
Bundaberg	3	82	..	..	..	1,925	963	619	..	..	333	57,816	61,741
Burke	10	..	..	..	..	4	..	..	..	..	96	79,913	80,023
Caboolture	6	..	..	..	..	..	341	40	..	..	1	9,179	9,567
Cairns	1	..	..	..	..	..	96	35	..	..	39	5,321	5,492
Camooweal	..	..	..	..	..	..	..	..	..	..	34,929	43,914	78,843
Cape River	..	..	..	..	..	..	88	1	3	3	8,004	96,970	105,069
Cardwell	..	..	..	6	..	..	3	92	..	59	..	9,857	10,017
Charleville	25	..	..	20	..	88	105	79	..	41	2,155	16,454	18,967
Charters Towers	15	..	303	..	..	70	317	224	..	..	2,505	190,331	193,765
Childers	..	..	..	..	..	949	102	104	..	..	11	13,684	14,850
Chillagoe	..	..	25	..	..	..	..	..	..	..	..	27,979	28,004
Chinchilla	22	2	..	..	..	2,932	86	1,765	..	31	160	53,972	58,970
Clermont	353	..	..	..	..	5	108	100	..	..	*75,394	69,708	145,668
Cleveland	..	..	..	..	..	..	8	1	..	..	..	1,273	1,282
Clifton	18	7	..	20	9	23	69	398	..	..	114	17,384	18,042
Cloncurry	150	..	..	..	..	..	16	..	..	7,033	110,565	104,341	222,105
Coen	..	..	..	..	..	..	..	..	..	..	..	28,477	28,477
Collinsville	..	..	..	..	..	46	..	..	..	..	15,937	136,746	152,729
Condamine	322	3	..	..	..	2,785	1	655	..	..	1,506	65,842	71,114
Cook	..	..	..	..	..	..	..	2	..	..	9,653	72,077	81,732
Crow's Nest	..	15	..	..	..	..	867	601	..	..	152	23,457	25,092
Croydon	..	..	..	..	..	..	..	..	..	..	..	26,541	26,541
Cunnamulla	244	..	1	..	..	3	64	15	..	..	4,911	8,018	13,256
Dalby	1	163	..	212	4	5,251	1,364	1,280	..	..	†1,692	114,675	124,642
Diamantina	..	..	..	..	..	..	..	..	..	..	6,391	26,504	32,895
Dirranbandi	144	..	..	..	..	1	4	22	..	..	844	9,427	10,442
Douglas	..	..	..	..	..	..	87	19	..	..	1	4,123	4,230
Dugandan	..	..	..	98	..	765	983	860	..	..	207	34,977	37,890

* Including 5,255 Polled Shorthorn.

† Including 90 Polled Shorthorn.

RETURN SHOWING THE PURE BREEDS OF CATTLE RETURNED IN THE SEVERAL PETTY SESSIONS DISTRICTS OF THE STATE AS AT 31ST DECEMBER, 1937—*continued.*

Petty Sessions District.	Aberdeen Angus.	Ayrshire.	Devon.	Friesian.	Guernsey.	Hereford.	Jersey.	Milking Shorthorn and Aust. Illawarra Shorthorn.	Polled Hereford.	Red Polled.	Shorthorn.	Crossed and Unspecified.	Total.
Eidsvold	5,251	..	..	..	..	6,750	82	263	..	..	1	44,456	56,803
Emerald	..	..	..	..	..	7,506	15	2	..	1	1,630	51,662	60,816
Esk	..	..	..	10	..	1,227	73	379	14	..	52	25,065	26,820
Etheridge	10	..	..	..	..	2,101	6	..	..	..	130	196,504	198,751
Eulo	..	..	..	..	..	1	6	..	..	..	665	4,509	5,181
Gatton	..	6	..	11	..	..	436	363	..	..	5	22,175	22,996
Gayndah	573	62	..	11	1	12,928	993	2,732	..	79	551	107,516	125,446
Gin Gin	2	1	..	..	..	8,189	84	165	200	..	356	50,015	59,012
Gladstone	355	32	..	48	..	20,985	1,679	2,075	270	50	3,379	121,869	150,742
Goondiwindi	103	2	..	..	..	9,817	14	10	..	..	5,016	34,280	49,242
Gympie	..	140	..	321	103	980	3,793	5,125	..	..	1,627	108,711	120,800
Harrisville	..	1	..	..	..	..	191	953	..	4	30	17,238	18,417
Herberton	10	..	118	..	1	..	235	37	..	..	145	69,875	70,421
Hughenden	20	..	..	..	..	1,547	80	..	..	..	8,141	44,383	54,171
Hungerford	..	..	..	..	..	..	3	..	..	..	1,580	4,074	5,657
Ingham	..	..	..	10	..	..	97	84	..	6	*51	31,590	31,838
Inglewood	29	..	..	..	..	1,303	80	317	..	..	2,269	19,830	23,828
Innisfail	..	..	..	..	..	6	53	68	..	..	1	5,283	5,411
Ipswich	..	..	..	15	..	..	667	181	..	..	..	12,935	13,798
Isisford	..	..	..	..	..	..	16	6	..	..	307	4,244	4,573
Julia Creek	..	..	..	..	..	..	30	..	..	442	1,124	51,984	53,580
Jundah	..	..	..	..	..	..	17	..	..	..	210	19,475	19,702
Kilcoy	..	4	..	73	..	1	239	339	..	..	..	15,370	16,026
Kilkivan	..	..	3	..	..	1,958	314	446	..	..	1	18,494	21,216
Killarney	..	..	695	..	..	11	201	477	..	..	10	9,525	10,919
Laidley	..	..	..	1	..	1	401	304	..	..	16	14,633	15,356
Logan	..	111	..	1	..	..	332	328	..	..	29	14,226	15,027
Longreach	..	..	..	..	..	..	97	92	..	24	3,420	8,223	11,856
Lowood	..	..	..	..	..	984	101	213	2	..	..	12,077	13,377
Mackay	365	29	..	14	1	2,457	743	1,313	..	2	6,927	144,853	156,704
Marburg	..	..	..	..	..	..	2	90	..	..	35	6,571	6,698
Mareeba	..	..	..	20	..	..	210	8	..	..	..	19,689	19,927
Maroochy	..	74	..	3	258	1	2,245	2,869	..	..	85	43,119	48,654
Maryborough	..	84	..	6	2	389	333	373	..	..	242	22,614	24,043
Mitchell	47	..	..	49	..	1,179	13	272	1	..	1,055	77,547	80,163
Monto	121	..	..	12	..	6,003	773	2,015	120	15	450	64,754	74,263
Mount Isa	..	..	..	14	..	..	7	..	..	..	..	2,144	2,165
Mount Morgan	..	..	..	87	..	5,544	873	751	105	1,400	43	109,550	118,353
Mount Perry	..	..	..	..	..	578	42	20	..	..	..	33,237	33,877
Muttaburra	93	..	..	..	..	..	61	7	..	60	2,389	3,825	6,435

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* Including 40 Polled Shorthorn.

Table No. 44—*continued.*

Return showing the Pure Breeds of Cattle Returned in the Several Petty Sessions Districts of the State as at 31st December, 1937—*continued.*

Petty Sessions District.	Aberdeen Angus.	Ayrshire.	Devon.	Friesian.	Guernsey.	Hereford.	Jersey.	Milking Shorthorn and Aust. Illawarra Shorthorn.	Polled Hereford.	Red Polled.	Shorthorn.	Crossed and Unspecified.	Total.
Nanango	519	2	..	71	103	3,427	1,488	3,683	2	327	2,736	87,540	99,898
Norman	..	..	..	..	..	200	..	..	..	..	26,809	170,854	197,863
Oakey	602	187	..	51	60	1,490	1,175	1,052	230	172	545	67,992	73,556
Pittsworth	..	243	..	5	1	2,015	134	540	..	50	212	42,243	45,443
Proserpine	60	..	..	..	..	40	132	30	..	..	..	14,123	14,385
Quilpie	..	..	..	..	..	..	6	5	..	..	3,067	17,717	20,795
Ravenswood	..	..	..	..	..	..	..	..	..	..	..	19,705	19,705
Redcliffe	..	103	..	60	8	..	96	171	..	..	..	16,836	17,274
Richmond	1	..	..	..	..	17,251	192	60	..	497	14,734	26,380	59,115
Rockhampton	100	171	2,500	39	..	34,138	1,281	1,356	314	251	2,310	347,075	389,535
Roma	387	1	..	..	..	1,517	182	163	8	6	12,969	71,872	87,105
Rosewood	8	..	..	..	8	..	324	304	..	7	2	19,572	20,225
St. George	8	..	..	..	..	150	74	30	..	..	3,713	5,130	9,105
St. Lawrence	1,010	..	..	..	..	22,733	..	..	16	..	1,263	122,775	147,797
Somerset	1	..	..	..	..	..	..	..	..	..	..	1,041	1,042
Southport	..	8	..	15	75	..	920	963	..	..	156	36,161	38,298
Springsure	69	..	..	..	..	13,546	172	3	..	1	7,639	78,648	100,078
Stanthorpe	640	..	1	..	..	215	149	10	..	10	25	7,259	8,309
Surat	1	..	..	..	..	36	..	..	..	7	1,146	9,707	10,897
Tambo	..	..	..	..	..	..	5	..	..	..	11,903	6,352	18,260
Taroom	..	..	2	..	..	13,760	2	68	..	..	9,322	68,311	91,465
Texas	33	..	..	..	1	98	145	6	..	1	170	10,000	10,454
Thargomindah	..	..	..	..	..	..	..	..	..	..	11,643	40,005	51,648
Tiaro	144	1	..	..	..	2,986	845	1,593	..	..	5	44,863	50,437
Toogoolawah	2,632	..	..	187	..	404	362	499	2	..	1,709	41,721	47,516
Toowoomba	..	1	..	194	53	..	1,122	1,583	..	15	104	31,951	35,023
Townsville	2	..	..	40	..	..	36	192	..	35	1,042	25,167	26,514
Warwick	1,018	4	..	34	11	1,069	521	578	8	145	899	36,053	40,340
Wienholt	1,027	23	..	184	..	10,094	2,263	4,112	1	541	120	115,301	133,666
Windorah	..	..	..	..	..	..	..	..	..	..	9,072	35,117	44,189
Winton	334	..	..	..	..	..	111	13	..	..	19,681	24,641	44,780
Woodford	211	..	..	..	..	2	393	534	..	2	..	16,076	17,218
Wynnum	..	7	..	..	1	..	67	65	..	..	..	1,617	1,757
Yeulba	..	..	..	..	..	..	..	..	..	..	..	10,517	10,517
Total	17,306	1,877	3,768	2,118	825	258,007	39,180	57,723	1,301	12,276	*510,200	5,054,584	5,959,165

* Including 5,385 Polled Shorthorn.

Table No. 45.

RETURN SHOWING DETAILS OF SHEEP SHORN AND WOOL PRODUCED IN THE SEVERAL PASTORAL DISTRICTS OF THE STATE DURING THE TWELVE MONTHS ENDED 31ST DECEMBER, 1936.

Pastoral District.	Classification of Sheep Shorn.						Result of Clip.				All Wool Expressed as *Greasy.
	Ewes.	Wethers.	Weaners and Hoggets.	Lambs.	Rams.	Total.	Greasy Wool.		Scoured Wool.		
							Bales.	Lb.	Bales.	Lb.	Lb.
Burke	993,326	488,395	89,615	252,363	30,873	1,854,572	29,666	9,549,466	8,365	1,806,176	13,462,848
Burnett	2,942	1,126	140	324	47	4,579	91	24,388	..	..	24,388
Cook	238	..	..	53	7	298	6	1,590	..	..	1,590
Darling Downs	823,273	1,232,749	161,515	58,983	15,711	2,292,231	56,800	17,311,454	174	34,513	17,386,232
Gregory North	619,099	318,910	80,033	146,357	20,982	1,185,381	21,043	7,085,963	6,343	1,368,631	10,051,330
Gregory South	262,630	68,301	45,840	42,009	7,764	426,544	9,597	3,182,829	939	182,696	3,578,670
Leichhardt	425,757	549,309	82,402	106,764	9,563	1,173,795	27,207	8,618,044	51	9,165	8,637,902
Maranoa	1,698,328	1,211,216	272,522	221,791	35,838	3,439,695	87,842	27,286,575	454	99,049	27,501,181
Mitchell	2,680,270	1,166,174	321,021	445,341	83,662	4,696,468	96,450	31,973,537	12,889	2,771,257	37,977,927
Moreton	3,365	2,087	460	139	79	6,130	133	33,449	..	..	33,449
North Kennedy	1,617	518	191	48	26	2,400	50	12,839	..	..	12,839
Port Curtis	10,253	7,009	3,277	608	370	21,517	398	109,061	..	..	109,061
South Kennedy	87,133	115,895	20,657	13,258	2,373	239,316	5,529	1,809,754	106	23,179	1,859,975
Warrego	1,756,067	786,435	240,194	296,814	46,078	3,125,588	74,999	24,905,053	2,768	590,814	26,185,150
Wide Bay	1,187	1,626	43	48	30	2,934	24	6,470	24	5,044	17,399
Total	9,365,485	5,949,750	1,317,910	1,584,900	253,403	18,471,448	409,835	131,910,472	32,113	6,890,524	146,839,941
Quantity of wool returned as greasy by growers but subsequently scoured							19,989	6,433,850	13,839	2,969,469	
Total remaining greasy							389,846	125,476,622			
Total scoured							..	..	45,952	9,859,993	
Quantity of wool fellmongered							..	..	9,992	2,143,908	4,645,134
Grand total scoured and fellmongered							..	..	55,944	12,003,901	
Estimated quantity of wool on skins other than fellmongered							..	..	..	..	2,117,555
Quantity of dead wool returned by owners excluded from clip							..	..	..	..	163,738
Grand total all wool produced expressed as greasy							..	..	..	..	153,766,368
Estimated value of total wool produced							..	..	†£9,155,506		

* Scoured wool has been converted into its greasy equivalent on the basis of 2⅙lb. greasy being required to produce 1 lb. scoured wool.

† Based on average price realised at Brisbane wool sales.

Table No. 46.

Return showing the Average Weight per Fleece in the Pastoral Districts of the State for Ten Years.

Pastoral District.	Average Weight of Clip per Sheep in Greasy Wool.										
	1927-8.	1928-9.	1929-30.	1930-1.	1931-2.	1932-3.	1933-4	1934-5.	1935-6.	1936.	Increase or Decrease 1936 on 1935–36.
	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb	Lb.	Lb.	Lb.
Burke	6·76	6·56	6·99	6·84	7·19	7·27	7·49	6·50	6·90	7·26	0·36
Burnett	5·04	5·32	5·62	6·10	5·88	6·56	5·90	5·26	5·16	5·33	0·17
Cook	4·76	4·21	5·01	5·84	5·22	6·24	5·62	4·18	5·19	5·34	0·15
Darling Downs ..	7·39	7·41	7·26	7·58	7·59	7·19	7·21	7·13	6·84	7·58	0·74
Gregory North ..	7·05	6·60	7·91	7·82	7·70	8·39	8·34	7·52	8·04	8·48	0·44
Gregory South ..	7·07	7·60	7·79	8·27	7·97	7·94	8·00	7·83	7·81	8·39	0·58
Leichhardt	6·65	6·51	6·64	6·69	6·27	7·09	6·86	6·75	6·67	7·36	0.69
Maranoa	7·57	7·63	7·89	7·75	7·94	7·68	7·61	7·73	7·28	8·00	0·72
Mitchell	7·38	7·59	7·79	8·04	7·38	7·92	8·06	7·33	7·58	8·09	0·51
Moreton	5·88	6·42	6·72	6·25	6·90	6·67	5·26	6·46	6·13	5·46	— 0·67
North Kennedy ..	6·15	5·60	5·63	4·54	5·66	6·44	6·02	5·37	6·28	5·35	— 0·93
Port Curtis	5·16	5·25	5·14	5·20	6·20	5·95	5·60	5·93	5·94	5·07	— 0·87
South Kennedy ..	7·20	6·69	6·66	6·59	6·04	7·43	7·36	7·04	6·75	7·77	1·02
Warrego	7·32	7·63	7·63	8·08	8·38	8·07	7·92	8·01	7·51	8·38	0.87
Wide Bay	5·13	5·32	6·23	5·54	5·74	7·03	5·87	5·52	5·31	5·93	0·62
State	7·24	7·31	7·52	7·67	7·60	7·75	7·74	7·36	7·30	7·95	0·65

Table No. 47.

Return showing Dead Wool and Skins obtained on Sheep Holdings, Value of Machinery thereon, and Average Weight of Greasy and Scoured Bales in the various Pastoral Districts of the State during the Twelve Months ended 31st December, 1936.

Pastoral District.	Dead Wool and Skins Sold or Utilised by Wool Growers.		Machinery on Sheep Holdings.	Average Weight per Bale of Wool Clip.	
	Dead Wool.	Sheep Skins.	Value.	Greasy.	Scoured.
	Lb.	No.	£	Lb.	Lb.
Burke	19,998	10,489	239,457	322	216
Burnett	50	163	588	268	..
Cook	..	..	..	265	..
Darling Downs	43,536	24,233	325,799	305	198
Gregory North	9,192	8,446	213,381	337	216
Gregory South	224	4,318	45,670	332	195
Leichhardt	6,186	6,205	141,047	317	180
Maranoa	26,395	30,056	340,308	311	218
Mitchell	44,605	38,294	524,012	332	215
Moreton	..	358	2,583	251	..
North Kennedy	31	10	333	257	..
Port Curtis	..	222	5,132	274	..
South Kennedy	225	1,066	33,746	327	219
Warrego	13,296	28,707	351,503	332	213
Wide Bay	..	185	3,959	270	210
Total	163,738	152,752	2,227,518	322	215

Table No. 48.

Return showing the Total Number of Sheep Shorn and the Result of the Clip in each of the Three Divisions of the State for the Twelve Months ended 31st December, 1936.

Division.	Total Number of Sheep Shorn.	Result of the Clip.				Total Clip.		Average per Fleece in Grease.
		Greasy.		Scoured.		Expressed as Greasy.	Percentage to Total.	
		Bales.	Lb.	Bales.	Lb.	Lb.		Lb.
Southern	9.390,715	231,866	73,430,996	4,359	912,116	75,407,247	51·35	8·03
Central	7,143,297	146,527	48,346,403	19,372	4,168,451	57,378,047	39·08	8·03
Northern	1,937,436	31,442	10,133,073	8,382	1,809,957	14,054,647	9·57	7·25
Total	18,471,448	409,835	131,910,472	32,113	6,890,524	146,839,941	100·00	7·95

Table No. 49.

RETURN FOR TEN YEARS SHOWING THE PROPORTION OF THE CLIP IN EACH OF THE THREE DIVISIONS TO THE TOTAL CLIP OF THE STATE.

Division.	1927-8.	1928-9.	1929-30.	1930-1.	1931-2.	1932-3.	1933-4.	1934-5.	1935-6.	1936.
	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
outhern	50·08	50·60	46·89	44·71	47·04	46·56	45·73	47·85	53·26	51·35
entral	36·47	37·23	40·28	42·37	38·87	42·60	40·83	40·33	37·61	39·08
orthern	13·45	12·17	12·83	12·92	14·09	10·84	13·44	11·82	9·13	9·57

Table No. 50.

RETURN SHOWING THE BREEDS OF SHEEP IN THE SEVERAL PASTORAL DISTRICTS OF THE STATE ON 31ST DECEMBER, 1936; ALSO THE NUMBER OF SHEEP UNDER ONE YEAR, AND ONE YEAR AND OVER, ON THAT DATE.

Pastoral District.	Breeds.					Total Sheep on 31st Dec., 1936.	Ages.		
	Merino.	Pure Breeds other than Merino.	Merino Comeback.	Crossbreeds.	Unspecified.		Under One Year.	One Year and Over.	Unspecified.
urke	2,084,898	..	..	..	..	2,084,898	491,315	1,536,482	57,101
urnett	1,536	*a* 267	622	1,714	1,359	5,498	1,264	3,328	906
ook	238	*b* 7	..	53	170	468	10	26	432
arling Downs	2,282,744	*c* 6,226	73,675	62,293	94,410	2,519,353	338,346	2,040,408	140,599
regory North	1,316,959	*d* 8,810	..	..	..	1,325,769	359,102	938,544	28,123
regory South	454,863	..	..	..	..	454,863	137,861	316,934	68
eichhardt	1,155,873	..	3,700	1,608	..	1,161,181	158,091	980,431	22,659
aranoa	3,640,791	*e* 705	2,546	2,428	..	3,646,470	692,670	2,855,380	98,420
itchell	5,140,402	..	..	..	..	5,140,402	1,372,398	3,707,482	60,522
oreton	4,203	*f* 343	684	2,624	1,994	9,848	1,230	6,687	1,931
orth Kennedy	1,055	*g* 101	..	1,674	943	3,773	323	2,330	1,120
ort Curtis	7,645	*h* 10,545	904	2,620	6,136	27,850	3,114	18,960	5,776
outh Kennedy	231,629	..	..	85	6,861	238,575	41,130	196,109	1,336
arrego	3,389,061	..	..	..	..	3,389,061	806,626	2,528,460	53,975
ide Bay	1,305	*j* 216	113	1,177	929	3,740	315	2,712	713
Total	19,713,202	*k* 27,220	82,244	76,281	112,802	20,011,749	4,403,795	15,134,273	473,681
Percentage to Total Sheep	98·51	0·14	0·41	0·38	0·56	100·00	22·00	75·63	2·37

a Border Leicester 25; Corriedale 237; Dorset Horn 1; Romney Marsh 4. *b* Border Leicester 7. *c* Border Leicester 438; Corriedale 4,778; Dorset Horn 224; English Leicester 129; Lincoln 32; Romney Marsh 196; South Down 426; Shropshire 3. *d* Polwarth 8,810; Corriedale 705. *f* Border Leicester 90; Corriedale 79; Dorset Horn 18; Romney Marsh 154; Shropshire 2. *g* Corriedale 100; South Down 1. *h* Border Leicester 8; Corriedale 10,512; Dorset Horn 25. *j* Corriedale 165; Romney Marsh 50; South Down 1. *k* Border Leicester 568; Corriedale 16,576; Dorset Horn 268; English Leicester 129; Lincoln 32; Romney Marsh 404; South Down 428; Shropshire 5; Polwarth 8,810.

Table No. 51.

RETURN SHOWING THE RESULTS OF LAMBING, LOSSES, SHEEP KILLED FOR FOOD ON HOLDINGS, ETC., IN THE SEVERAL PASTORAL DISTRICTS OF THE STATE DURING THE YEAR 1936.

Pastoral District.	Total Sheep as per Stock Returns on 1st Jan., 1936.	Ewes Mated with Rams.	Lambs Marked.	Percentage of Lambing.	Purchases and Transfers.	Sales and Transfers.	*Losses.	Killed for Food on Holding.	Total Sheep as per Stock Returns on 31st Dec., 1936.	Skins Obtained
urke	1,652,857	962,580	550,004	57·14	338,605	281,839	153,860	20,869	2,084,898	10,489
urnett	6,042	3,037	1,470	48·40	1,053	1,707	1,230	130	5,498	163
ook	361	27	10	37·04	102	..	5	..	468	..
arling Downs ..	2,557,271	621,561	385,730	62·06	722,657	930,314	185,880	30,111	2,519,353	24,233
regory North ..	1,036,174	667,481	370,378	55·49	215,603	185,434	98,002	12,950	1,325,769	8,446
regory South ..	397,975	269,248	157,623	58·54	59,901	106,356	49,197	5,083	454,863	4,318
eichhardt	1,410,818	367,321	192,658	52·45	169,636	208,933	120,186	12,812	1,161,181	6,205
aranoa	3,738,455	1,392,310	758,567	54·48	670,134	1,177,217	293,906	49,563	3,646,470	30,056
itchell	4,179,095	2,480,464	1,457,873	58·77	783,044	848,143	371,375	60,092	5,140,402	38,294
oreton	11,086	2,608	1,711	65·61	4,318	5,734	1,263	270	9,848	358
orth Kennedy ..	4,049	838	337	40·21	1,812	1,989	306	130	3,773	10
ort Curtis ..	28,731	8,651	3,630	41·96	1,165	1,978	3,427	271	27,850	222
outh Kennedy ..	295,968	78,076	43,794	56·09	29,689	87,656	41,057	2,163	238,575	1,066
arrego	3,006,984	1,550,224	907,557	58·54	476,963	706,010	254,072	42,361	3,389,061	28,707
ide Bay	4,227	658	473	71·88	262	503	627	92	3,740	185
Total	18,060,093	8,405,084	4,831,815	57·49	3,474,944	4,543,813	1,574,393	236,897	20,011,749	152,752

* For details see Table No. 52.

Table No. 52.

RETURN SHOWING DETAILS OF LOSSES IN SHEEP DURING THE YEAR 1936.

Pastoral District.	* LOSSES AND THE CAUSES THEREOF AS RETURNED BY OWNERS, AND THE PERCENTAGE OF EACH CAUSE TO TOTAL LOSSES IN EACH DISTRICT.																						
	Cancer. (Senile Necrosis)		Dingoes.		Drought.		Flood.		Fly.		Lambing.		Old Age.		Shearing.		Worms.		†Other.		Total Losses.	Losses as Percentage to Total Sheep 1-1-36	Percentage to Total Losses in each Distr.
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	%
Burke	5,612	3·65	10,128	6·58	9,561	6·21	11,523	7·49	58,550	38·05	14,539	9·45	20,797	13·52	8,095	5·26	400	0·26	*a* 14,655	9·53	153,860	9·31	9·77
Burnett	6	0·49	339	27·56	435	35·37	..	..	10	0·81	164	13·33	37	3·01	12	0·98	9	0·73	*b* 218	17·72	1,230	20·36	0·08
Cook	5	100·00	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	1·39	0·00
Darling Downs	1,424	0·77	11,909	6·41	101,068	54·37	641	0·34	18,083	9·73	12·348	6·64	12·451	6·70	7,810	4·20	12,482	6·72	*c* 7,664	4·12	185,880	7·27	11·81
Gregory North	2,286	2·33	3,256	3·32	6,212	6·34	7·155	7·30	36,961	37·71	9,071	9·26	19,566	19·97	6,802	6·94	105	0·11	*d* 6,588	6·72	98,002	9·46	6·22
Gregory South	915	1·86	2,724	5·54	8,988	18·27	1,773	3·60	12,235	24·87	5,588	11·36	5,281	10·73	2,327	4·73	..	..	*e* 9,366	19·04	49,197	12·36	3·12
Leichhardt	2,016	1·68	12,541	10·43	31,505	26·21	526	0·44	26,705	22·22	8,374	6·97	16,348	13·60	4,038	3·36	6,268	5·22	*f* 11,865	9·87	120,186	10·54	7·63
Maranoa	3,743	1·27	3,686	1·25	152,382	51·85	234	0·08	54,051	18·39	31,097	10·58	29,659	10·09	8,189	2·79	3,764	1·28	*g* 7,101	2·42	293,906	7·86	18·67
Mitchell	7,901	2·13	15,779	4·25	35,907	9·67	8,892	2·39	165,811	44·65	36,921	9·94	61,139	16·46	13,511	3·64	1,991	0·54	*h* 23,523	6·33	371,375	8·89	23·59
Moreton	9	0·71	288	22·80	462	36·58	..	..	27	2·14	142	11·24	152	12·03	6	0·48	100	7·92	*j* 77	6·10	1,263	11·39	0·08
North Kennedy	4	1·31	28	9·15	..	..	20	6·54	53	17·32	21	6·86	74	24·18	..	..	40	13·07	*k* 66	21·57	306	7·56	0·02
Port Curtis	75	2·19	191	5·57	1,406	41·03	8	0·23	278	8·11	212	6·19	352	10·27	109	3·18	706	20·60	*l* 90	2·63	3,427	11·93	0·22
South Kennedy	487	1·18	4,565	11·12	15,389	37·48	40	0·10	7,539	18·36	1,386	3·37	8,141	19·83	1,107	2·70	680	1·66	*m* 1,723	4·20	41,057	13·87	2·61
Warrego	3,805	1·50	1,917	0·76	32,985	12·98	3,818	1·50	127,857	50·32	29,130	11·47	37,984	14·95	8,978	3·53	613	0·24	*n* 6,985	2·75	254,072	8·45	16·14
Wide Bay	..	..	70	11·17	55	8·77	..	..	..	..	15	2·39	35	5·58	..	..	430	68·58	22	3·51	627	14·83	0·04
Total	28,288	1·80	67,421	4·28	396,355	25·18	34,630	2·20	508,160	32·28	149,008	9·46	212,016	13·47	60,984	3·87	27,588	1·75	89,943	5·71	1,574,393	8·72	100·00

* Losses of unmarked lambs are not taken into consideration.
† Causes included in "Other."
a Bogging, foxes, grass-seed, lamb-marking, poison weed.
b Domestic dogs.
c Bloat, bogging, crows, dipping, domestic dogs, eagle hawks, foxes, grass-seed, poison weed, travelling.
d Lamb-marking, poison weed, travelling.
e Lamb-marking, poison weed.
f Bogging, eagle hawks, foxes, grass-seed, pink-eye, poison weed, speargrass.
g Blight, bogging, dipping, domestic dogs, foxes, grass-seed, lamb-marking, poison weed, rain off shears, travelling.
h Bogging, eagle hawks, foxes, grass-seed, lamb-marking, poison weed, rain off shears.
j Foxes, scrub ticks.
k Domestic dogs, grass-seed.
l Frosts, spear grass.
m Lamb-marking, poison weed.
n Grass-seed, lamb-marking, pink-eye, poison weed, rain off shears, travelling.

Table No. 53.

RETURN SHOWING NUMBER OF HOLDINGS IN VARIOUS GROUPINGS AND SHEEP THEREON IN THE SEVERAL PASTORAL DISTRICTS AS AT 31ST DECEMBER, 1935.

Pastoral Districts.	1 AND UNDER 50 ACRES.		50 AND UNDER 100 ACRES.		100 AND UNDER 500 ACRES.		500 AND UNDER 1,000 ACRES.		1,000 AND UNDER 5,000 ACRES.		5,000 AND UNDER 10,000 ACRES.		10,000 AND UNDER 20,000 ACRES.		20,000 AND UNDER 50,000 ACRES.		50,000 AND UNDER 100,000 ACRES.		100,000 ACRES AND UPWARDS.		TRAVELLING FLOCKS.		TOTAL.	
	Holdings.	Sheep.	Holdings.	Sheep.	Holdings.	Sheep.	Holdings.	Sheep.	Holdings.	Sheep.	Holdings.	Sheep.	Holdings.	Sheep.	Holdings.	Sheep.	Holdings.	Sheep.	Holdings.	Sheep.	No.	Sheep.	Holdings.	Sheep.
Burke..	7	68	2	130	4	425	..	..	7	3,486	15	18,307	90	229,969	180	630,845	51	413,795	23	355,832	..	..	379	1,652,857
Burnett	56	772	11	463	17	2,586	6	2,221	..	..	..	..	..	..	..	..	..	..	..	..	..	..	90	6,042
Cook	10	298	1	63	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11	361
Darling Downs ..	160	1,979	56	2,472	251	61,704	236	121,718	741	993,291	172	520,490	74	388,957	31	340,539	4	126,121	..	..	..	..	1,725	2,557,271
Gregory North ..	3	57	..	..	3	195	..	..	4	1,472	..	..	23	36,044	93	289,503	29	175,769	29	533,134	..	..	184	1,036,174
Gregory South ..	..	..	..	..	..	..	..	..	3	339	..	..	14	27,101	14	53,428	12	62,653	14	254,454	..	..	57	397,975
Leichhardt	36	439	22	890	18	2,090	18	5,102	108	109,215	79	206,413	59	230,424	40	266,731	10	252,880	2	66,634	..	..	392	1,140,818
Maranoa	16	352	10	541	25	3,855	32	11,560	249	303,990	186	439,110	207	773,674	164	936,761	45	539,631	26	728,981	..	..	960	3,738,455
Mitchell	9	156	3	147	6	1,174	4	756	34	22,389	40	58,553	188	560,467	311	1,537,792	88	985,749	40	1,005,926	1	5,986	724	4,179,095
Moreton	177	2,600	18	1,188	33	3,352	1	400	2	3,338	1	208	..	..	..	..	..	..	..	..	..	..	232	11,086
North Kennedy ..	27	746	4	257	2	495	3	723	4	1,828	..	..	..	..	..	..	..	..	..	..	..	..	40	4,049
Port Curtis	41	600	17	820	21	3,636	4	663	7	3,062	3	4,850	2	4,900	1	10,200	..	..	..	..	..	..	96	28,731
South Kennedy ..	11	235	5	266	3	656	..	..	7	5,175	5	7,890	15	36,285	14	66,540	7	73,444	2	105,477	..	..	69	295,968
Warrego	3	52	..	..	5	683	2	541	14	10,744	24	47,073	111	298,710	191	882,064	73	567,034	51	1,200,083	..	..	474	3,006,984
Wide Bay	78	1,003	12	463	8	606	..	..	..	..	2	2,155	..	..	..	..	..	..	..	..	..	..	100	4,227
Totals— Holdings ..	634	..	161	..	396	..	306	..	1,180	..	527	..	783	..	1,039	..	319	..	187	..	1	..	5,533	..
Sheep	..	9,357	..	7,700	..	81,457	..	143,684	..	1,458,329	..	1,305,049	..	2,586,531	..	5,014,403	..	3,197,076	..	4,250,521	..	5,986	..	18,060,093
Average Size of Flocks	15		48		206		470		1,236		2,476		3,303		4,826		10,022		22,730		5,986		3,264	

NOTE.—This information has not been compiled since 1935.

Government Statistician's Office,
Brisbane, 1st December, 1938.

COLIN CLARK,
Government Statistician.

DAVID WHYTE, Government Printer, Brisbane

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